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FILE 'REGISTRY' ENTERED AT 09:15:03 ON 07 MAY 2003

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Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 6 MAY 2003 HIGHEST RN 511508-58-0

DICTIONARY FILE UPDATES: 6 MAY 2003 HIGHEST RN 511508-58-0

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:

<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

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L1 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2003 ACS

RN 9005-25-8 REGISTRY

CN **Starch (8CI, 9CI)** (CA INDEX NAME)

OTHER NAMES:

CN .alpha.-Starch

CN Absorbo HP

CN Ace P 320

CN Actobody TP 2

CN Aeromyl 115

CN Agglofroid 009

CN Agglofroid 313E

CN Allbond 200

CN Alphajel KS 37

CN Alstar B

CN Amaizo 100

CN Amaizo 213

CN Amaizo 310

CN Amaizo 5

CN Amaizo 71

CN Amaizo 710

CN Amaizo W 13

CN Amalean I-A 2131

CN Amalean I-A 7081

CN Amicoa

CN Amidex 3005

CN Amidex 4001

CN Amido-STA 1500

CN Amigel

CN Amigel 12014

CN Amigel 30076

CN Amijel VA 160

CN Amilys 100

CN Amycol HF

CN Amycol W

CN Amylogum

CN Amylomaize starch

CN Amylomaize VII

Jan Delaval
Reference Librarian
Biotechnology & Chemical Library
CM1 1E07 - 703-308-4498
jan.delaval@uspto.gov

CN Amylon 70
CN Amylose, mixt. with amylopectin
CN Amylox 1
CN Amylum
CN Amyren 14
CN Amyren 71
CN Amysil K
CN Amyzet TK
CN Argo Corn Starch
CN Arrowroot starch
CN AS 225
CN AS 225 (starch)
CN Atomyl
CN Aytex P
CN B 200
CN B 200 (polysaccharide)
CN Bakeup YT 10

ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT - Use FCN, FIDE, or ALL for
DISPLAY

DEF A high-polymeric carbohydrate material primarily composed of amylopectin
and amylose. It is usually derived from cereal grains such as corn, wheat
and sorghum, and from roots and tubers such as potatoes and tapioca. It
includes starch which has been pregelatinized by heating in the presence
of water.

DR 9057-05-0, 53262-79-6, 131800-97-0, 60496-95-9, 67674-80-0, 75138-75-9,
75398-82-2, 154636-77-8, 152987-55-8, 85746-25-4, 42616-76-2, 53112-52-0

MF Unspecified

CI COM, MAN

LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS,
BIOTECHNO, CA, CABA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS,
CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DRUGU, EMBASE, IFICDB, IFIPAT,
IFIUDB, IPA, MEDLINE, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PIRA,
PROMT, RTECS*, TOXCENTER, USAN, USPAT2, USPATFULL, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

56963 REFERENCES IN FILE CA (1957 TO DATE)

6151 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

57068 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 138:293419

REFERENCE 2: 138:292805

REFERENCE 3: 138:292793

REFERENCE 4: 138:292775

REFERENCE 5: 138:292771

REFERENCE 6: 138:292758

REFERENCE 7: 138:292750

REFERENCE 8: 138:292746

REFERENCE 9: 138:292744

REFERENCE 10: 138:292589

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L2 ANSWER 1 OF 2 REGISTRY COPYRIGHT 2003 ACS

RN 9037-22-3 REGISTRY

CN **Amylopectin (9CI)** (CA INDEX NAME)

OTHER NAMES:

CN Amaizo 839

CN Amioca

CN Amioca WCS

CN C*Pharm 12018

CN Cato 225

CN Cato 240

CN Cato 270

CN Cerestar SF 04201

CN Farinex WM 85

CN Film Kote 54

CN Honen Alpha Waxy Starch

CN Kosol

CN Pectin, amylo

CN Starch, waxy

CN Ultraamylopectin N

CN Ultrasperse A

CN Waxy 7350

CN Waxy Alpha Y

CN Waxy corn starch

CN Waxy maize starch

CN Waxy starch

CN WCS

DR 9050-86-6, 189047-96-9

MF Unspecified

CI PMS, COM, MAN

PCT Manual registration, Polyother, Polyother only

LC STN Files: AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, DDFU, DRUGU, EMBASE, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, NAPRALERT, PIRA, PROMT, TOXCENTER, TULSA, USPAT2, USPATFULL

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

2786 REFERENCES IN FILE CA (1957 TO DATE)

202 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

2794 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 138:292771

REFERENCE 2: 138:286478

REFERENCE 3: 138:286444

REFERENCE 4: 138:286256

REFERENCE 5: 138:286255

REFERENCE 6: 138:283313

REFERENCE 7: 138:276257

REFERENCE 8: 138:276256

REFERENCE 9: 138:276255

REFERENCE 10: 138:270689

L2 ANSWER 2 OF 2 REGISTRY COPYRIGHT 2003 ACS

RN 9005-82-7 REGISTRY

CN **Amylose (8CI, 9CI)** (CA INDEX NAME)

OTHER NAMES:

CN .alpha.-Amylose

CN Amylose EX 1

CN AS 10

CN AS 110

CN AS 30

CN AS 30 (carbohydrate)

CN AS 320

CN AS 5

CN AS 70

CN EX-I

CN Polyamylose

CN San Super 240L

CN V Amylose

DR 9051-21-2, 9060-22-4, 37243-82-6

MF Unspecified

CI PMS, COM, MAN

PCT Manual registration, Polyother, Polyother only

LC STN Files: AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, DIOGENES, EMBASE, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MSDS-OHS, NAPRALERT, PIRA, PROMT, TOXCENTER, USPAT2, USPATFULL, VTB

Other Sources: EINECS**, NDSL**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

4690 REFERENCES IN FILE CA (1957 TO DATE)

447 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

4705 REFERENCES IN FILE CAPLUS (1957 TO DATE)

REFERENCE 1: 138:292580

REFERENCE 2: 138:292559

REFERENCE 3: 138:292531

REFERENCE 4: 138:286478

REFERENCE 5: 138:286474

REFERENCE 6: 138:286451

REFERENCE 7: 138:286444

REFERENCE 8: 138:286248

REFERENCE 9: 138:276329

REFERENCE 10: 138:276257

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(FILE 'HOME' ENTERED AT 07:51:42 ON 07 MAY 2003)
SET COST OFF

FILE 'REGISTRY' ENTERED AT 07:51:54 ON 07 MAY 2003

L1 1 S STARCH/CN

L2 2 S (AMYLOSE OR AMYLOPECTIN)/CN

FILE 'HCAPLUS' ENTERED AT 07:52:07 ON 07 MAY 2003

L3 57064 S L1
 L4 6016 S L2
 L5 137282 S ?STARCH?
 L6 12088 S AMYLOSE OR AMYLOPECTIN
 L7 139264 S L3,L5
 L8 12522 S L4,L6
 L9 57409 S ?POTATO?
 L10 8215 S (SOLANUM OR S) () TUBEROSUM
 E POTATO/CT
 L11 14247 S E3
 E E28+ALL
 L12 24586 S E16,E17,E15,E22-E27,E40-E43
 L13 57569 S L9-L12
 L14 13752 S L7 AND L13
 L15 2021 S L8 AND L13
 L16 13985 S L14,L15
 L17 2635 S L16 AND ?CATION?
 L18 79 S L17 AND (?CROSSLINK? OR ?CROSS LINK?)
 E CROSSLINK/CT
 L19 216 S E19
 E E15+ALL
 L20 48735 S E2
 E E8+ALL
 L21 778 S E1
 E E2+ALL
 E E9+ALL
 L22 31234 S E3
 E E9+ALL
 E E10+ALL
 L23 16055 S E3
 E E11+ALL
 E E11+ALL
 L24 678 S E4,E3
 E E9+ALL
 E E12+ALL
 L25 4348 S E3,E2+NT
 L26 17 S L17 AND L19-L25
 L27 79 S L18,L26
 L28 24 S L27 AND (RHEOLOG? OR TENSILE STRENGTH OR BEHAVIOR OR FIBERBOA
 L29 18 S L27 AND (CHEMICAL MODIFICATION OR MICROPARTICLE OR ADHESIVE O
 L30 41 S L28,L29
 SEL DN AN 1 5 7 11 12 17 18 24 25 26 30 31 37 40
 L31 14 S L30 AND E1-E40
 L32 309 S L16 AND ADHESIV?
 L33 139 S L16 AND FLOCCUL?
 L34 197 S L16 AND COAGUL?
 L35 1 S L16 AND PERSONAL CARE
 E COSMETIC/CT
 L36 38857 S E31-E89
 E E31+ALL
 L37 58078 S E2,E1+NT
 L38 27362 S E25+NT OR E27+NT OR E30+NT OR E31+NT
 L39 830 S E26.
 L40 142369 S COSMETIC#/SC,SX
 L41 149 S L16 AND L36-L40
 L42 935 S L16 AND PHARMACEUT?/SC,SX
 E SKIN/CT
 E E3+ALL
 L43 6 S L16 AND E4+NT
 L44 8 S L16 AND (E36+NT OR E37+NT OR E29+NT)

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      E 35+ALL
      E SKIN, DISEASE/CT
      E E3+ALL
L45      16 S L16 AND E4,E5,E3+NT
      E E148+AL
      E E3+ALL
L46      8 S L16 AND E3+NT
      E E16+ALL
L47      1 S L16 AND E3
L48      7 S L16 AND (E7+NT OR E8+NT)
L49      1608 S L32-L35,L41-L48
L50      263 S L49 AND L17
L51      53 S L49 AND (?CROSSLINK? OR ?CROSS LINK?)
L52      9 S L19-L25 AND L49
L53      53 S L51,L52
L54      37 S L53 NOT L27
L55      14 S L54 AND (VERY LIGHTLY OR NONMIGRAT? OR PREGELATIN? OR CANE JU
      SEL DN AN 10 12 13
L56      11 S L55 NOT E1-E9
L57      25 S L31,L35,L56
L58      247 S L50 NOT L27,L51-L57
      SEL DN AN L58 1 3 7 9 11 14 18 23-25 31 37 45 47 49 54 57 58 60
L59      58 S L58 AND E10-E179
L60      83 S L57,L59
      E CHOWDHARY M/AU
L61      30 S E3-E12
      E ECONOMY MUD/PA,CS
L62      3 S E5,E6
      E EC MUD/PA,CS
      E ECO MUD/PA,CS
      E ECON MUD/PA,CS
      E ECONO MUD/PA,CS
      E ECONOM MUD/PA,CS
L63      2 S L61,L62 AND L3-L8
L64      3 S L61 AND L62
L65      25 S L61 NOT L63,L64
      SEL DN AN L65 8
L66      1 S E1-E3
L67      89 S L60,L63,L64,L66 AND L3-L66
L68      65 S L67 AND L3,L4
L69      24 S L67 NOT L68
L70      5 S L69 AND L61-L66
L71      70 S L68,L70
L72      19 S L67 NOT L71

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FILE 'REGISTRY' ENTERED AT 09:15:03 ON 07 MAY 2003

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FILE 'HCAPLUS' ENTERED AT 09:15:14 ON 07 MAY 2003

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FILE COVERS 1907 - 7 May 2003 VOL 138 ISS 19
 FILE LAST UPDATED: 6 May 2003 (20030506/ED)

This file contains CAS Registry Numbers for easy and accurate
 substance identification.

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L71 ANSWER 1 OF 70 HCAPLUS COPYRIGHT 2003 ACS
 AN 2003:222319 HCAPLUS
 DN 138:240369
 TI Guar gum-based fracturing and treatment fluids for petroleum wells
 IN Chowdhary, Manjit S.; White, Walter M.
 PA Economy Mud Products Company, USA
 SO U.S. Pat. Appl. Publ., 12 pp., Cont.-in-part of U.S. Ser. No. 146,326.
 CODEN: USXXCO
 DT Patent
 LA English
 IC ICM E21B001-00
 NCL 507209000
 CC 51-2 (Fossil Fuels, Derivatives, and Related Products)
 Section cross-reference(s): 33
 FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003054963	A1	20030320	US 2002-267895	20021009
	US 2003017952	A1	20030123	US 2000-501559	20000209
	US 2002052298	A1	20020502	US 2001-991356	20011119
	US 2003008780	A1	20030109	US 2002-146326	20020514
PRAI	US 2000-501559	A2	20000209		
	US 2001-991356	A2	20011119		
	US 2002-146326	A2	20020514		
AB	Well treatment fluids for petroleum wells, esp. fracturing fluids, prepd. by mixing a fast-hydrating high-viscosity guar gum powder to a hydrating liq. The guar gum (or guar deriv.) is then hydrated, a crosslinking agent and/or thickener is added, and the well treating fluid is introduced into the well. The guar gum derivs. are preferably hydroxypropyl guar, carboxymethyl guar, and carboxymethyl hydroxypropyl guar.				
ST	guar gum crosslinking well fracturing fluid; petroleum well fracturing fluid guar; hydroxypropyl guar crosslinking well fracturing fluid; carboxymethyl guar crosslinking well fracturing fluid				
IT	Well treatment fluids (fracturing; guar gum-based fracturing and treatment fluids for petroleum wells)				
IT	9000-30-0, Guar gum 39421-75-5, Hydroxypropyl guar gum 39454-79-0, Carboxymethyl hydroxypropyl guar gum 51198-15-3, Carboxymethyl guar gum RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses) (guar gum-based fracturing and treatment fluids for petroleum wells)				

L71 ANSWER 2 OF 70 HCAPLUS COPYRIGHT 2003 ACS
 AN 2003:127106 HCAPLUS
 DN 138:139193
 TI A soap bar for personal use or laundry containing modified starch
 IN Kumar, Velayudhan Nair Gopa; Sankholkar, Devadatta Shivaji; Sahni, Sunil Manoharlal
 PA Hindustan Lever Limited, India
 SO Indian, 37 pp.
 CODEN: INXXAP
 DT Patent

LA English
 IC ICM C11D010-04
 ICS C11D009-00
 CC 46-2 (Surface Active Agents and Detergents)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	IN 175386	A	19950610	IN 1991-BO347	19911122
PRAI	IN 1991-BO347		19911122		

AB A detergent bar for personal use or fabric wash having improved crack resistance, lather and less mush, comprises: (i) 25 to 90 wt% detergent of which at least half, preferably three quarters is soap; (ii) 0.1 to 60 wt% solid structurant at least part of which amounting to at least 0.1 wt%, preferably at least 0.5 wt%, more preferably at least 1 wt% of the bar is modified **starch** such as **starch** acetate, hydroxypropyl **starch** in granular or gelatinized form; (iii) 8 to 40% wt% water, the modified **starch** having been incorporated in the dry state to the detergent material of the bar. The modified **starch** can be derived from any source of **starch** such as rice, **potato**, maize, tapioca, jowar, millets, waxy maize, high **amylose** maize, wheat and the like.

ST soap bar modified **starch** crack resistance; **starch** acetate soap bar; hydroxypropyl **starch** soap bar

IT **Soaps**

RL: TEM (Technical or engineered material use); USES (Uses)
 (bars; compn. contg. modified **starch**)

IT 9004-53-9, Dextrin **9005-25-8D, Starch, cationic**, uses **9005-25-8D, Starch**, polymethacrylic acid grafted 9045-28-7, **Starch** acetate 9049-76-7, Hydroxypropyl **starch** 25087-26-7D, Polymethacrylic acid, **starch** grafted 39433-68-6, **Starch** propionate
 RL: TEM (Technical or engineered material use); USES (Uses)
 (soap bar compn. contg. modified **starch**)

L71 ANSWER 3 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 2003:23513 HCAPLUS

DN 138:92539

TI Hydroxypropyl and carboxymethyl derivatives of powdered guar gum for fracturing of petroleum and natural gas wells

IN **Chowdhary, Manjit S.**; White, Walter M.

PA **Economy Mud Products Company, USA**

SO U.S. Pat. Appl. Publ., 12 pp., Cont.-in-part of U.S. Pat. Appl. 2002 52,298.

CODEN: USXXCO

DT Patent

LA English

IC ICM E21B001-00

NCL 507209000

CC 51-2 (Fossil Fuels, Derivatives, and Related Products)

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003008780	A1	20030109	US 2002-146326	20020514
	US 2003017952	A1	20030123	US 2000-501559	20000209
	US 2002052298	A1	20020502	US 2001-991356	20011119
	US 2003054963	A1	20030320	US 2002-267895	20021009
PRAI	US 2000-501559	A3	20000209		
	US 2001-991356	A2	20011119		
	US 2002-146326	A2	20020514		

AB Petroleum wells and reservoirs are treated with a fracturing fluid prepd. by mixing fast-hydrating high-viscosity powd. guar gum with a hydrating liq., hydrating the powd. guar, mixing a crosslinking agent with the fracturing fluid, and then introducing the fluid into the wellbore. The

LA English
 IC ICM C11D010-04
 ICS C11D009-00
 CC 46-2 (Surface Active Agents and Detergents)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	IN 175386	A	19950610	IN 1991-BO347	19911122
PRAI	IN 1991-BO347		19911122		

AB A detergent bar for personal use or fabric wash having improved crack resistance, lather and less mush, comprises: (i) 25 to 90 wt% detergent of which at least half, preferably three quarters is soap; (ii) 0.1 to 60 wt% solid structurant at least part of which amounting to at least 0.1 wt%, preferably at least 0.5 wt%, more preferably at least 1 wt% of the bar is modified **starch** such as **starch** acetate, hydroxypropyl **starch** in granular or gelatinized form; (iii) 8 to 40% wt% water, the modified **starch** having been incorporated in the dry state to the detergent material of the bar. The modified **starch** can be derived from any source of **starch** such as rice, **potato**, maize, tapioca, jowar, millets, waxy maize, high **amylose** maize, wheat and the like.

ST soap bar modified **starch** crack resistance; **starch** acetate soap bar; hydroxypropyl **starch** soap bar

IT **Soaps**

RL: TEM (Technical or engineered material use); USES (Uses)
 (bars; compn. contg. modified **starch**)

IT 9004-53-9, Dextrin **9005-25-8D, Starch**, **cationic**, uses **9005-25-8D, Starch**, polymethacrylic acid grafted 9045-28-7, **Starch** acetate 9049-76-7, Hydroxypropyl **starch** 25087-26-7D, Polymethacrylic acid, **starch** grafted 39433-68-6, **Starch** propionate
 RL: TEM (Technical or engineered material use); USES (Uses)
 (soap bar compn. contg. modified **starch**)

L71 ANSWER 3 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 2003:23513 HCAPLUS

DN 138:92539

TI Hydroxypropyl and carboxymethyl derivatives of powdered guar gum for fracturing of petroleum and natural gas wells

IN **Chowdhary, Manjit S.**; White, Walter M.

PA **Economy Mud Products Company, USA**

SO U.S. Pat. Appl. Publ., 12 pp., Cont.-in-part of U.S. Pat. Appl. 2002 52,298.

CODEN: USXXCO

DT Patent

LA English

IC ICM E21B001-00

NCL 507209000

CC 51-2 (Fossil Fuels, Derivatives, and Related Products)

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003008780	A1	20030109	US 2002-146326	20020514
	US 2003017952	A1	20030123	US 2000-501559	20000209
	US 2002052298	A1	20020502	US 2001-991356	20011119
	US 2003054963	A1	20030320	US 2002-267895	20021009
PRAI	US 2000-501559	A3	20000209		
	US 2001-991356	A2	20011119		
	US 2002-146326	A2	20020514		

AB Petroleum wells and reservoirs are treated with a fracturing fluid prep'd. by mixing fast-hydrating high-viscosity powd. guar gum with a hydrating liq., hydrating the powd. guar, mixing a crosslinking agent with the fracturing fluid, and then introducing the fluid into the wellbore. The

high-viscosity powd. guar gum is selected from hydroxypropyl guar, carboxymethyl guar, and carboxymethyl hydroxypropyl guar gum. In addn., the fracturing fluid can also include a delayed gel breaker, a gelling agent (e.g., borate), and a proppant.

ST petroleum fracturing fluid hydroxypropyl carboxymethyl guar gum thickener; crosslinked gel breaker guar gum petroleum well fracturing

IT Well treatment fluids

(fracturing; hydroxypropyl and carboxymethyl derivs. of powd. guar gum for fracturing of petroleum and natural gas wells)

IT Petroleum recovery

(hydroxypropyl and carboxymethyl derivs. of powd. guar gum for fracturing of petroleum and natural gas wells)

IT 39421-75-5, Hydroxypropyl guar gum 39454-79-0, Carboxymethyl hydroxypropyl guar gum 51198-15-3, Carboxymethyl guar gum

RL: TEM (Technical or engineered material use); USES (Uses)

(fracturing fluid contg.; hydroxypropyl and carboxymethyl derivs. of powd. guar gum for fracturing of petroleum and natural gas wells)

L71 ANSWER 4 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 2002:565012 HCAPLUS

DN 137:97510

TI **Starch-based cationic**-modified composition of **flocculants** or binders for ceramic manufacturing

PA Zuckerforschung Tulln Gesellschaft m.b.H., Austria

SO Austrian, 20 pp.

CODEN: AUXXAK

DT Patent

LA German

IC ICM C04B035-632

CC 57-2 (Ceramics)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	AT 408439	B	20011126	AT 2000-1435	20000821
	WO 2002016285	A1	20020228	WO 2001-AT260	20010801
	WO 2002016285	C2	20021128		
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
	AU 2001078299	A5	20020304	AU 2001-78299	20010801
PRAI	AT 2000-1435	A	20000821		
	WO 2001-AT260	W	20010801		

AB The **flocculants** or binders for ceramic slips contains

.gtoreq.95% of **amylopectin** of **potato-starch**

(AP-PS) esp. AP-PS sulfamate that is **cationic**-modified with electropos. gelating quaternary amino-groups. The AP-PS is manufd. from **potato** using mol. biol., esp. genetic engineering, methods to inhibit the formation of **amylose** using GBSS genes. The AP-PS is used in the etherified or esterified form, and in the form of graft polymer. The AP-PS is linked by epichlorhydrin or 1,3-dichlor-2-propanol mixed with polyamines, or N,N'-dimethylol-N,N'-ethyleneurea mixed with phosphoroxychloride, sodium trimetaphosphate, polyepoxides, adipic acid, glyoxal. The binders based on the AP-PS are suitable for ceramic slips contg. aluminosilicate fibers, alumina, aluminosilicate, and chalk powders, cellulose or polyethylene fibers, and/or colloidal silica. Drying of ceramic formed from such slips is carried out at 300-500.degree. and sintering at 1500-2000.degree..

ST ceramic slip **flocculant** binder **amylopectin**
potatostarch graft polymer; aluminosilicate fiber alumina chalk
silica **starch** polymer

IT Gene, plant
RL: NUU (Other use, unclassified); USES (Uses)
(GBSS; **starch**-based **cationic**-modified compn. of
flocculants or binders for ceramic manufg.)

IT Synthetic fibers
RL: CPS (Chemical process); PEP (Physical, engineering or chemical
process); PYP (Physical process); TEM (Technical or engineered material
use); PROC (Process); USES (Uses)
(aluminum silicate, ceramic component; **starch**-based
cationic-modified compn. of **flocculants** or binders
for ceramic manufg.)

IT Fibers
RL: MOA (Modifier or additive use); USES (Uses)
(cellulosic, ceramic slip component; **starch**-based
cationic-modified compn. of **flocculants** or binders
for ceramic manufg.)

IT Chalk
RL: CPS (Chemical process); PEP (Physical, engineering or chemical
process); PYP (Physical process); TEM (Technical or engineered material
use); PROC (Process); USES (Uses)
(ceramic component; **starch**-based **cationic**-modified
compn. of **flocculants** or binders for ceramic manufg.)

IT Polyamines
RL: MOA (Modifier or additive use); USES (Uses)
(component of linking agent; **starch**-based **cationic**
-modified compn. of **flocculants** or binders for ceramic
manufg.)

IT Polyolefin fibers
RL: MOA (Modifier or additive use); USES (Uses)
(ethylene, ceramic slip component; **starch**-based
cationic-modified compn. of **flocculants** or binders
for ceramic manufg.)

IT Quaternary ammonium compounds, uses
RL: MOA (Modifier or additive use); USES (Uses)
(**flocculant** modifier; **starch**-based **cationic**
-modified compn. of **flocculants** or binders for ceramic
manufg.)

IT Polymers, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical
process); TEM (Technical or engineered material use); PROC (Process); USES
(Uses)
(graft, **amylopectin** of **potatostarch**; **starch**
-based **cationic**-modified compn. of **flocculants** or
binders for ceramic manufg.)

IT Viscosity
(of etherified **amylopectin** of **potato-starch**
; **starch**-based **cationic**-modified compn. of
flocculants or binders for ceramic manufg.)

IT Epoxides
RL: MOA (Modifier or additive use); USES (Uses)
(polyepoxides, component of linking agent; **starch**-based
cationic-modified compn. of **flocculants** or binders
for ceramic manufg.)

IT 7773-06-0, Ammonium sulfamate
RL: MOA (Modifier or additive use); USES (Uses)
(**cationic** modifier; **starch**-based **cationic**
-modified compn. of **flocculants** or binders for ceramic
manufg.)

IT 1344-28-1, Alumina, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical

process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(ceramic component; **starch-based cationic**-modified compn. of **flocculants** or binders for ceramic manufg.)

IT 7631-86-9, Colloidal silica, uses

RL: MOA (Modifier or additive use); USES (Uses)

(colloidal, ceramic slip component; **starch-based cationic**-modified compn. of **flocculants** or binders for ceramic manufg.)

IT 96-23-1, 1,3-Dichloro-2-propanol 106-89-8, uses 107-22-2, Glyoxal
123-38-6, Propionaldehyde, uses 124-04-9, Adipic acid, uses 136-84-5,
N,N'-Dimethylol-N,N'-ethyleneurea 7785-84-4, Sodium trimetaphosphate
10025-87-3, Phosphoric trichloride

RL: MOA (Modifier or additive use); USES (Uses)

(component of linking agent; **starch-based cationic**-modified compn. of **flocculants** or binders for ceramic manufg.)

IT 9005-25-8, Potato starch, uses

9037-22-3, Amylopectin

RL: TEM (Technical or engineered material use); USES (Uses)

(**flocculant**; **starch-based cationic**-modified compn. of **flocculants** or binders for ceramic manufg.)

IT 3033-77-0, 2,3-Epoxypropyltrimethyl ammonium chloride

RL: MOA (Modifier or additive use); USES (Uses)

(linking agent; **starch-based cationic**-modified compn. of **flocculants** or binders for ceramic manufg.)

L71 ANSWER 5 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 2002:536397 HCAPLUS

DN 137:64810

TI Guar gum powder possessing improved hydration characteristics

IN Chowdhary, Manjit; White, Walter

PA Economy Mud Products Company, USA

SO U.S. Pat. Appl. Publ., 7 pp.

CODEN: USXXCO

DT Patent

LA English

IC E21B033-00

NCL 507209000

CC 44-7 (Industrial Carbohydrates)

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002052298	A1	20020502	US 2001-991356	20011119
	US 2003017952	A1	20030123	US 2000-501559	20000209
	US 2003008780	A1	20030109	US 2002-146326	20020514
	US 2003054963	A1	20030320	US 2002-267895	20021009
PRAI	US 2000-501559	A3	20000209		
	US 2001-991356	A2	20011119		
	US 2002-146326	A2	20020514		

AB Disclosed is a guar gum powder product whose manufg. process includes the addnl. step of extruding hydrated and flaked guar splits prior to grinding and drying. The extruding step may be included before or after the step of flaking the splits. The inclusion of the extruding step, along with the flaking step, has been found to create a guar gum powder product which has advantageous properties over the prior art. These advantageous properties include (1) increasing the hydration rate and the hydration acceleration rate of the guar gum powder without any corresponding change in particle size, and (2) providing a hydration acceleration rate this is less affected by cold temps.

ST extruding guar gum process hydration acceleration rate

IT 9000-30-0, Guar gum 11078-30-1, D-Galacto-D-mannan

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
 (guar gum powder possessing improved hydration rate and process for manuf. including extrusion step)

L71 ANSWER 6 OF 70 HCAPLUS COPYRIGHT 2003 ACS
 AN 2002:173857 HCAPLUS
 DN 137:21638
 TI Tack and bonding strength of carbohydrate-based **adhesives** from different botanical sources
 AU Emengo, F. N.; Chukwu, S. E. R.; Mozie, J.
 CS Department of Pure and Industrial Chemistry, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria
 SO International Journal of Adhesion and Adhesives (2002), 22(2), 93-100
 CODEN: IJAADK; ISSN: 0143-7496
 PB Elsevier Science Ltd.
 DT Journal
 LA English
 CC 43-6 (Cellulose, Lignin, Paper, and Other Wood Products)
 Section cross-reference(s): 37, 38
 AB Modified and un-modified **starch** (I) extd. from root crops, cereals, and a legume were assessed as bases for **adhesives** for paper-paper, paper-cardboard, paper-metal, and paper-glass substrates. **Adhesives** based on un-modified **starch** from all of the crops investigated produced low or high tack for paper-paper and paper-cardboard, depending on the intensity of mech. action/heat applied in the formulation process. None of the I samples produced good tack for paper-metal or paper-glass. **Adhesives** based on I from yam, cassava, **potatoes**, and corn modified by acid moisturizing and roasting produced high tack and bonding strength for paper-paper and paper-glass. The effect of **modification** on these properties is attributable to the decrease in mol. size of the glycosidic chains of I.
 ST botanical source effect **starch** based **adhesive** bonding strength tackiness
 IT **Adhesive** bonding
 Cassava (*Manihot esculenta*)
 Corn
 Paper
 Paperboard
 Potato (*Solanum tuberosum*)
 Rice (*Oryza sativa*)
 Soybean (*Glycine max*)
 Tackiness
 Yam (*Dioscorea*)
 (botanical source effect on **starch**-based **adhesive** bonding strength and tackiness in paper bonding with various substrates)
 IT Glass, properties
 Metals, properties
 RL: PRP (Properties)
 (botanical source effect on **starch**-based **adhesive** bonding strength and tackiness in paper bonding with various substrates)
 IT **Adhesives**
 (**starch**-based; botanical source effect on **starch**-based **adhesive** bonding strength and tackiness in paper bonding with various substrates)
 IT 9005-25-8, **Starch**, uses
 RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
 (botanical source effect on **starch**-based **adhesive** bonding strength and tackiness in paper bonding with various substrates)
 RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) BS; BS 188 1957
- (2) Brutlecht, C; Starch 1966, P22
- (3) Chalmers, L; Chemical specialties domestic and industrial 1979, P77
- (4) Chalmers, L; Chemical specialties domestic and industrial 1979, P80
- (5) Colins, E; Experiments in polymer chemistry 1973, P363
- (6) Heinrich, H; Westfalia Separator 1981, P15
- (7) Osuji, G; Advances in yam research 1985, P25
- (8) Schoch, T; Cereal chemistry 1941, P1
- (9) Shields, J; Adhesives handbook 1976, P1
- (10) Skeist, I; Handbook of adhesives 2nd ed 1975
- (11) Wake, W; Adhesion and adhesives: fundamentals and practice 1954, P25

L71 ANSWER 7 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 2002:142955 HCAPLUS

DN 136:169246

TI Use of **starch** compositions in **papermaking** as wet end additives

IN Anderson, Kevin Ray; Garlie, David Edward

PA Cargill Incorporated, USA

SO PCT Int. Appl., 31 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM D21H017-29

ICS D21H023-06

CC 43-7 (Cellulose, Lignin, Paper, and Other Wood Products)

Section cross-reference(s): 44

FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002014602	A1	20020221	WO 2001-US12937	20010420
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6451170	B1	20020917	US 2000-635962	20000810
US 2002088585	A1	20020711	US 2000-740278	20001219
US 6524440	B2	20030225		
AU 2001057144	A5	20020225	AU 2001-57144	20010420
PRAI US 2000-635962	A	20000810		
US 2000-740278	A	20001219		
WO 2001-US12937	W	20010420		

AB **Starch** compns., including **cationic crosslinked starches**, and methods of using those **starches** in the wet end system of a paper machine are disclosed. The **starch** compns. of the disclosure are particularly adapted for customization for specific wet end systems such as drainage and retention aids, and allow for **modification** to correspond to variations in the wet end of the papermaking machine. The **starch** compns. of the disclosure possess properties permitting them to be modified during cooking to improve performance during the papermaking process. The **starch** can be selected from a variety of **starches**, including corn (such as waxy corn or dent corn), **potato**, sorghum, tapioca, wheat, rice, etc. The **starch** is preferably a corn **starch**, and typically a dent corn **starch**, and more typically a **cationized dent corn starch**. The **crosslinked starch** permits a greater range in particle sizes compared to non-

crosslinked starch. This range of particle sizes allows greater opportunity to improve wet-end performance. It is believed that improved performance is obtained when **starch** particle size closely correlates to that of other particles in the furnish.

ST **starch cationized crosslinked** papermaking
wet end additive; drainage retention aid **cationized crosslinked starch** papermaking

IT Paper
(use of **starch** compns. in papermaking)

IT 9005-25-8D, **Starch, cationized, crosslinked**

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(use of **starch** compns. in papermaking)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Karppli, A; WO 9833977 A 1998 HCAPLUS

(2) Nat Starch Chem Invest; EP 0603727 A 1994 HCAPLUS

L71 ANSWER 8 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 2002:10381 HCAPLUS

DN 136:90642

TI Compns., methods and kits comprising primary **coagulant** material and bridging **flocculant** material for purifying, clarifying and/or nutrifying contaminated drinking water

IN Souter, Philip Frank; Ure, Colin

PA Procter & Gamble Co., USA

SO PCT Int. Appl., 47 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C02F001-56

ICS C02F001-52; C02F001-00

CC 61-5 (Water)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002000557	A2	20020103	WO 2001-US19879	20010621
	WO 2002000557	A3	20020627		
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, VZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
	GB 2364047	A1	20020116	GB 2000-15569	20000627
	GB 2364048	A1	20020116	GB 2000-15571	20000627
	EP 1294644	A2	20030326	EP 2001-946639	20010621
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR			
PRAI	GB 2000-15569	A	20000627		
	GB 2000-15571	A	20000627		
	GB 2000-27214	A	20001108		
	WO 2001-US19879	W	20010621		

AB Compns., methods and kits for purifying and clarifying and/or nutrifying contaminated drinking water and which comprise a primary **coagulant** material and a bridging **flocculant** material, the levels and ratios of **coagulant** to **flocculant** preferably falling within certain ranges. The compns. and kits are esp. designed for

personal or domestic use in the batchwise purifn. and **clarification** of relatively small predetd. vols. of contaminated drinking water. Highly preferred compns. also contain one or more of a **cationic coagulant** aid, esp. chitosan, a microbiocidal disinfectant, a water-sol. alkali, a water-insol. silicate, and a food additive or nutrient source. A compn. for purifying and clarifying contaminated drinking water and which comprises: (i) a primary **coagulant** selected from the group consisting of water-sol., multivalent inorg. salts and mixts. thereof; (ii) a bridging **flocculant** selected from the group consisting of water-sol. and water-dispersible anionic and nonionic polymers having a wt. av. mol. wt. of at least about 2,000,000, and mixts. thereof; (iii) a **coagulant** aid selected from the group consisting of water-sol. and water-dispersible **cationic** polymers having a wt. av. mol. wt. of less than about 1,500,000, and mixts. thereof; and optionally one or more of (iv) a microbiocidal disinfectant; (v) a water-sol. alkali; (vi) a water-insol. silicate selected from clays, zeolites and mixts. thereof; and (vii) a food additive or nutrient source.

ST **flocculation coagulation** compn contaminated drinking water purifn

IT Polyelectrolytes
(anionic, with ave. mol. wt. .gtoreq. 2,000,000; water-sol. or water-dispersible polymeric bridging **flocculants** in compns. for purifying, clarifying and/or nutrifying contaminated drinking water)

IT Polyelectrolytes
(**cationic**, with ave. mol. wt. < about 1,500,000; water-sol. or water-dispersible polymeric **coagulants** in compns. for purifying, clarifying and/or nutrifying contaminated drinking water)

IT Water **purification**
(**coagulation**; compns., methods and kits for purifying, clarifying and/or nutrifying contaminated drinking water)

IT X zeolites
RL: NUU (Other use, unclassified); USES (Uses)
(compn. component for purifying, clarifying and/or nutrifying contaminated drinking water)

IT Disinfectants
Food additives
Nutrients
(compns., methods and kits for purifying, clarifying and/or nutrifying contaminated drinking water)

IT Humic acids
RL: REM (Removal or disposal); PROC (Process)
(compns., methods and kits for purifying, clarifying and/or nutrifying contaminated drinking water)

IT Cryptosporidium parvum
Giardia
(cysts; removal of; compns., methods and kits for purifying, clarifying and/or nutrifying contaminated drinking water)

IT Water **purification**
(filtration; compns., methods and kits for purifying, clarifying and/or nutrifying contaminated drinking water)

IT Organic matter
(**flocculation** of; compns., methods and kits for purifying, clarifying and/or nutrifying contaminated drinking water)

IT Water **purification**
(**flocculation**; compns., methods and kits for purifying, clarifying and/or nutrifying contaminated drinking water)

IT Polymers, uses
RL: NUU (Other use, unclassified); USES (Uses)
(non-ionic; water-sol. or water-dispersible polymeric bridging **flocculants**; compns., methods and kits for purifying, clarifying and/or nutrifying contaminated drinking water)

IT Water **purification**
 (sterilization and disinfection; compns., methods and kits for
 purifying, clarifying and/or nutrifying contaminated drinking water)

IT 9005-25-8, **Potato starch**, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (**Cationic** modified; compn. component for purifying,
 clarifying and/or nutrifying contaminated drinking water)

IT 58740-43-5, Magnafloc 351 62449-27-8, Magnafloc LT20 64925-87-7,
 Magnafloc LT 26 68189-92-4, Magnafloc LT25 136602-60-3, Magnafloc 919
 RL: NUU (Other use, unclassified); USES (Uses)
 (bridging **flocculant**; compn. component for purifying,
 clarifying and/or nutrifying contaminated drinking water)

IT 9012-76-4, Chitosan
 RL: NUU (Other use, unclassified); USES (Uses)
 (**coagulant** aid; compn. component for purifying, clarifying
 and/or nutrifying contaminated drinking water)

IT 144-55-8, Sodium bicarbonate, uses 1318-93-0, Montmorillonite, uses
 16984-48-8, Fluoride, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (compn. component for purifying, clarifying and/or nutrifying
 contaminated drinking water)

IT 7553-56-2, Iodine, uses 7778-54-3, Calcium hypochlorite
 RL: NUU (Other use, unclassified); USES (Uses)
 (disinfectant; compn. component for purifying, clarifying and/or
 nutrifying contaminated drinking water)

IT 497-19-8, Sodium carbonate, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (effervescing dispersant; compn. component for purifying, clarifying
 and/or nutrifying contaminated drinking water)

IT 12173-47-6, Hectorite
 RL: NUU (Other use, unclassified); USES (Uses)
 (**flocculation** aid; compn. component for purifying, clarifying
 and/or nutrifying contaminated drinking water)

IT 9004-34-6, Cellulose, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (powd.; **flocculant** aid; compn. component for purifying,
 clarifying and/or nutrifying contaminated drinking water)

IT 1327-41-9, Polyaluminum chloride 1344-67-8, Copper chloride 7446-70-0,
 Aluminum chloride, uses 7758-98-7, Copper sulfate, uses 7785-87-7,
 Manganese sulfate 10043-01-3, Aluminum sulfate 10124-49-9, Iron
 sulfate 12040-57-2, Iron chloride 55892-56-3, Sulfuric acid, aluminum
 salt, basic
 RL: NUU (Other use, unclassified); USES (Uses)
 (primary **coagulant**; compn. component for purifying,
 clarifying and/or nutrifying contaminated drinking water)

L71 ANSWER 9 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 2001:563771 HCAPLUS

DN 135:157364

TI Cosmetic compositions containing an amphoteric **starch** and a
cationic conditioning agent

IN Douin, Veronique; Chesneau, Laurent; Descoster, Sandrine

PA L'Oreal S.A., Fr.

SO Eur. Pat. Appl., 26 pp.

CODEN: EPXXDW

DT Patent

LA French

IC ICM A61K007-06

CC 62-3 (Essential Oils and **Cosmetics**)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1120103	A1	20010801	EP 2000-403529	20001214

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO

FR 2803745	A1	20010720	FR 2000-409	20000113
FR 2803745	B1	20020315		
AU 745595	B2	20020321	AU 2000-72465	20001221
BR 2001000259	A	20010821	BR 2001-259	20010108
CN 1305801	A	20010801	CN 2001-103011	20010112
JP 2001226217	A2	20010821	JP 2001-7088	20010115
US 2001031270	A1	20011018	US 2001-759165	20010116
US 20020176875	A9	20021128		
PRAI FR 2000-409	A	20000113		

OS MARPAT 135:157364

AB Cosmetic compns. contg. an amphoteric **starch** and a **cationic** conditioning agent chosen from quaternary ammonium surfactants and **cationic** polymers having quaternary ammonium group, and **cationic** silicones. A shampoo contained **potato starch** modified by 2-chloroethyl aminodipropionic acid 1.5, diallyl di-Me ammonium chloride homopolymer (Merquat 100) 0.5, and water q.s. 100.0 g.

ST cosmetic shampoo amphoteric **starch cationic** conditioner

IT Onium compounds

RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(4,5-dihydro-1-methyl-2-nortallow alkyl-1-(2-tallow amidoethyl) imidazolium, Me sulfates, quaternium 87; cosmetic compns. contg. amphoteric **starch** and **cationic** conditioning agent)

IT Onium compounds

RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(4,5-dihydro-2-(hydrogenated nortallow alkyl)-1-[2-(hydrogenated tallow amido)ethyl]-1-methylimidazolium Me sulfates, quaternium 83; cosmetic compns. contg. amphoteric **starch** and **cationic** conditioning agent)

IT Polysiloxanes, biological studies

RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

([(aminoethyl)amino]propyl hydroxy, di-Me, amodimethicone; cosmetic compns. contg. amphoteric **starch** and **cationic** conditioning agent)

IT Polysiloxanes, biological studies

RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(amino-contg.; cosmetic compns. contg. amphoteric **starch** and **cationic** conditioning agent)

IT Polyelectrolytes

Surfactants

(amphoteric; cosmetic compns. contg. amphoteric **starch** and **cationic** conditioning agent)

IT Polyelectrolytes

Surfactants

(anionic; cosmetic compns. contg. amphoteric **starch** and **cationic** conditioning agent)

IT Polyelectrolytes

Surfactants

(**cationic**; cosmetic compns. contg. amphoteric **starch** and **cationic** conditioning agent)

IT Hair preparations

(conditioners; cosmetic compns. contg. amphoteric **starch** and **cationic** conditioning agent)

IT Perfumes

Preservatives

Shampoos

Sunscreens

Thickening agents

(cosmetic compns. contg. amphoteric **starch** and
cationic conditioning agent)

IT Glycols, biological studies
Polymers, biological studies
Polysiloxanes, biological studies
Protein hydrolyzates
Proteins, general, biological studies
Vitamins

RL: BUU (Biological use, unclassified); BIOL (Biological study); USES
(Uses)

(cosmetic compns. contg. amphoteric **starch** and
cationic conditioning agent)

IT Carboxylic acids, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES
(Uses)

(hydroxy; cosmetic compns. contg. amphoteric **starch** and
cationic conditioning agent)

IT Onium compounds
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES
(Uses)

(imidazolium compds., 2-(C9-19 and C9-19-unsatd. alkyl)-1-[(C10-20 and
C10-20-unsatd. amido)ethyl]-4,5-dihydro-1-Me, Me sulfates, Quaternium
87, Rewoquat PG 75; cosmetic compns. contg. amphoteric **starch**
and **cationic** conditioning agent)

IT Surfactants
(nonionic; cosmetic compns. contg. amphoteric **starch** and
cationic conditioning agent)

IT Quaternary ammonium compounds, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES
(Uses)

(polymers; cosmetic compns. contg. amphoteric **starch** and
cationic conditioning agent)

IT 68921-83-5
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES
(Uses)

(Ceraphyl 70; cosmetic compns. contg. amphoteric **starch** and
cationic conditioning agent)

IT 81-13-0, panthenol 9005-25-8D, **Starch**, amphoteric,
biological studies 17301-53-0, Behenyltrimethyl ammonium chloride
25136-75-8, Merquat 3300 26062-79-3, Merquat 100 28299-33-4D,
Imidazoline, quaternary ammonium derivs. 36332-93-1, methyl 18
eicosanoic acid 65497-29-2, jaguar c13s 145686-74-4D, q2 5200,
quaternary ammonium derivs. 203341-07-5, dow corning 939
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES
(Uses)

(cosmetic compns. contg. amphoteric **starch** and
cationic conditioning agent)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

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- (2) National Starch; <http://www.nationalstarch.com/solan.htm/> 2000
- (3) National Starch And Chem Corp; EP 0689829 A 1995 HCAPLUS
- (4) National Starch And Chem Corp; EP 0948960 A 1999 HCAPLUS

L71 ANSWER 10 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 2001:562711 HCAPLUS

DN 136:284311

TI Evaluation of pregelatinized **starch** as excipient for improving
dissolution rate and efficiency of nimodipine

AU Rao, N. Rama; Chowdary, K. P. R.

CS Siddhartha College of Pharmaceutical Sciences, Vijayawada, 10, India

SO International Journal of Pharmaceutical Excipients (1999), 1(1), 20-24
 CODEN: IJPEC4
 PB ENAR Foundation Research Centre
 DT Journal
 LA English
 CC 63-6 (**Pharmaceuticals**)
 AB The objective of the study is to prep. and evaluate pregelatinized **starch** (PGS) as excipient for improving the dissoln. rate and efficiency of nimodipine (NM), a practically insol. drug. PGS was prepd. by a known method of heating an aq. slurry of **potato starch** in the presence of Tween-80 and subsequent drying. PGS was found to be easily dispersible in water. The PGS prepd. fulfilled official **identification** tests. Dispersions of nimodipine PGS were prepd. and the dispersions were evaluated for content uniformity, drug-excipient interactions by IR spectra and DTA studies, phys. state of the drug in dispersions by XRD and DSC, dissoln. rate and efficiency. Marked increase in the dissoln. rate and efficiency of nimodipine was obsd. with dispersions in comparison to its phys. mixt. and pure drug. Dissoln. of nimodipine from the dispersions obeyed first order kinetics.
 ST nimodipine pregelatinized **starch** excipient dispersion dissoln
 IT Dispersion (of materials)
 Dissolution
 Drug interactions
 (pregelatinized **starch** as excipient for improving dissoln. rate and efficiency of nimodipine)
 IT Drug delivery systems
 (solid dispersions; pregelatinized **starch** as excipient for improving dissoln. rate and efficiency of nimodipine)
 IT 9005-65-6, Tween-80
 RL: MOA (Modifier or additive use); USES (Uses)
 (pregelatinized **starch** as excipient for improving dissoln. rate and efficiency of nimodipine)
 IT 9005-25-8, **Starch**, biological studies 66085-59-4, Nimodipine
 RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (pregelatinized **starch** as excipient for improving dissoln. rate and efficiency of nimodipine)
 RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
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 (2) Atsuya, Y; Chem Pharm Bull 1990, V38, P176
 (3) Chowdary, K; Indian Drugs 1995, V11, P537
 (4) Chowdary, K; Indian Drugs 1998, V6, P368
 (5) Cohen, J; J Pharm Sci 1963, V52, P132 HCAPLUS
 (6) Khan, K; J Pharma Pharmacol 1975, V27, P48 HCAPLUS
 (7) Oosten, B; Starch/Starke 1982, V34, P233 HCAPLUS
 (8) Schmidt, P; Acta Pharm Technol 1988, V34, P22 HCAPLUS
 (9) Sekulovic, D; Pharmaize 1987, V42, P556 HCAPLUS
 (10) Symecko, C; Drug Dev Ind Pharm 1997, V23, P229 HCAPLUS
 (11) Tarimci, N; Pharmaize 1988, V43, P323 HCAPLUS
 (12) U S Pharmacopoeial conversion Inc; The United States Pharmacopoeia, 23rd Ed 1995
 (13) Underwood, T; J Pharm Sci 1972, V62, P239
 L71 ANSWER 11 OF 70 HCAPLUS COPYRIGHT 2003 ACS
 AN 2001:559554 HCAPLUS
 DN 135:141957
 TI Cosmetic detergent compositions containing a chosen amphoteric **starch**
 IN Maubru, Mireille; Beauquey, Bernard; Douin, Veronique
 PA L'Oreal S.A., Fr.
 SO Eur. Pat. Appl., 22 pp.

CODEN: EPXXDW

DT Patent

LA French

IC ICM A61K007-06

CC 62-3 (Essential Oils and Cosmetics)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1120104	A1	20010801	EP 2000-403530	20001214
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	FR 2803744	A1	20010720	FR 2000-411	20000113
	AU 746456	B2	20020502	AU 2000-72397	20001220
	BR 2001000265	A	20010821	BR 2001-265	20010110
	CN 1307860	A	20010815	CN 2001-103377	20010112
	RU 2193389	C2	20021127	RU 2001-101415	20010112
	JP 2001233744	A2	20010828	JP 2001-7087	20010115
	US 2002034487	A1	20020321	US 2001-759530	20010116
PRAI	FR 2000-411	A	20000113		
OS	MARPAT 135:141957				
AB	Cosmetic detergent compns. contg. a chosen amphoteric starch are claimed (Markush structure given). A shampoo contained sodium lauryl ether sulfate 15, potato starch modified with 2-chloroethyl aminodipropionic acid neutralized with sodium hydroxide 0.5, JR-400 0.4, hydroxyethyl cellulose 0.4, citric acid q.s. pH = 7, and water q.s. 100 g.				
ST	cosmetic shampoo detergent amphoteric starch				
IT	Amides, biological studies				
	RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)				
	(N-(hydroxyalkyl); cosmetic detergent compns. contg. chosen amphoteric starch)				
IT	Polysiloxanes, biological studies				
	RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)				
	([(aminoethyl)amino]propyl hydroxy, di-Me; cosmetic detergent compns. contg. chosen amphoteric starch)				
IT	Polysiloxanes, biological studies				
	RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)				
	(alkyl aryl; cosmetic detergent compns. contg. chosen amphoteric starch)				
IT	Polysiloxanes, biological studies				
	RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)				
	(alkyl; cosmetic detergent compns. contg. chosen amphoteric starch)				
IT	Polyelectrolytes				
	Surfactants				
	(amphoteric; cosmetic detergent compns. contg. chosen amphoteric starch)				
IT	Fats and Glyceridic oils, biological studies				
	RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)				
	(animal; cosmetic detergent compns. contg. chosen amphoteric starch)				
IT	Polyelectrolytes				
	Surfactants				
	(anionic; cosmetic detergent compns. contg. chosen amphoteric starch)				
IT	Polysiloxanes, biological studies				
	RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)				

(aryl; cosmetic detergent compns. contg. chosen amphoteric starch)

IT Polyelectrolytes
(**cationic**; cosmetic detergent compns. contg. chosen amphoteric starch)

IT Polysaccharides, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(**cationic**; cosmetic detergent compns. contg. chosen amphoteric starch)

IT Detergents
Shampoos
(cosmetic detergent compns. contg. chosen amphoteric starch)

IT Ceramides
Fatty acids, biological studies
Glycols, biological studies
Paraffin oils
Polymers, biological studies
Polysiloxanes, biological studies
Protein hydrolyzates
Proteins, general, biological studies
Vitamins
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(cosmetic detergent compns. contg. chosen amphoteric starch)

IT Polysiloxanes, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(hydroxy-terminated; cosmetic detergent compns. contg. chosen amphoteric starch)

IT Carboxylic acids, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(hydroxy; cosmetic detergent compns. contg. chosen amphoteric starch)

IT Surfactants
(nonionic; cosmetic detergent compns. contg. chosen amphoteric starch)

IT Fats and Glyceridic oils, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(vegetable; cosmetic detergent compns. contg. chosen amphoteric starch)

IT 81-13-0, panthenol 111-42-2, diethanolamine, biological studies
9004-34-6D, Cellulose, quaternary ammonium salts, biological studies
9004-62-0, Hydroxyethyl cellulose 9004-82-4, Polyoxyethylene sodium lauryl ether sulfate **9005-25-8D, Starch**, amphoteric, biological studies 9016-00-6D, Polydimethylsiloxane, trimethylsilyl-terminated 26062-79-3 26590-05-6 29297-55-0, Vinylimidazole vinylpyrrolidone copolymer 31900-57-9D, Polydimethylsiloxane, trimethylsilyl-terminated 36332-93-1, methyl 18 eicosanoic acid 65497-29-2, jaguar c 13s 81859-24-7 156048-34-9 156048-35-0 203341-07-5, dow corning 939
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(cosmetic detergent compns. contg. chosen amphoteric starch)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

- (1) Henkel Kgaa; DE 19816665 A 1999 HCAPLUS
- (2) Imperial Chemical Ind Plc; WO 0033806 A 2000 HCAPLUS
- (3) Kao Corp; JP 05132410 A 1993 HCAPLUS
- (4) Kao Corp; JP 05132695 A 1993 HCAPLUS
- (5) National Starch And Chem Corp; EP 0689829 A 1996 HCAPLUS

L71 ANSWER 12 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 2001:412278 HCAPLUS

DN 135:241205

TI **Starch-based microparticles:** a preliminary study of the structure and properties

AU Van Soest, J. J. G.; Dziechciarek, Y.; Philipse, A. P.

CS Agrotechnol. Res. Inst., Wageningen, 6700 AA, Neth.

SO Zywnosc (2000), 7(2, Supl.), 213-225

CODEN: ZYWNFL

PB Polskie Towarzystwo Technologow Zywnosci, Oddzial Malopolski

DT Journal

LA English

CC 17-11 (Food and Feed Chemistry)

AB **Starch** is a cheap and abundant polysaccharide, which is found in nature as water insol. semicryst. granules with sizes in the range of 0.5-70 .mu.m. Although **starch** is easily gelatinized or dissolved in water, it is not possible to obtain stable suspensions or colloidal systems from native **starches**. This inherent disadvantage of **starch** has limited its **applications**. In this study **potato starches** were processed to obtain fully biodegradable microparticles, which behave as microgels or colloids in aq. suspensions. The process is based on the unique combination of gelatinization and **crosslinking** performed in water-oil emulsions. The obtained **starches** are very stable in water and show an interesting shear-thinning behavior, even at high solid contents. The rheol. behavior of the new **starches** is unique. The **starches** offer new possibilities for prepg. **starch** colloids with a range of properties. A range of **starch** microparticles was obtained opening the door to numerous food and non-food markets (paints and coatings, inks and pigments, superabsorbent polymers, food additives, **personal care** products, pharmaceuticals, ceramics, paper additives, **adhesives**, thickeners, emulsifiers,). The final goal of this work is to establish the relationships between synthesis parameters and the structural, colloidal and theol. features. Particles were prepd. using epichlorohydrin and trisodium trimetaphosphate as **cross-linkers**. In this paper important reaction parameters, such as temp., time and compn. of the reactants (**starch**, **cross-linker**, hydroxide), which influence the structure of the microparticles during synthesis, were identified. Using Bohlin rheometry the formation of the **starch** network structure was studied. Particle sizes of the microgels are in the range of 60 nm up to 10 .mu.m. The synthesized particles were slightly neg. (in the range of - 5 to - 45 mV). Features such as size and charge of the particles depended on the type and amt. of **cross-linker** used. Descriptions of the theol. properties of **starch-based** microparticles in aq. suspensions, both in dil. and concd. systems, were given. The microgel-type particles showed a behavior that is typical for (slightly) charged materials or polyelectrolytes.

ST **starch** microparticle microgel

IT Viscosity

(of **starch-based** microparticles)

IT Microparticles

(prepn. and properties of **starch-based** microparticles)

IT Colloids

Microgels

(**starch-based** microparticles as)

IT 106-89-8, Epichlorohydrin, reactions 7785-84-4, Trisodium trimetaphosphate

RL: RCT (Reactant); RACT (Reactant or reagent)

(**crosslinking** agent in prepn. of **starch-based** microparticles)

IT 9005-25-8, **Starch**, biological studies
 RL: BSU (Biological study, unclassified); FFD (Food or feed use); BIOL
 (Biological study); USES (Uses)
 (prepn. and properties of **starch**-based microparticles)
 RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
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 (2) Arshady, R; Pol Engin Sci 1989, V29, P1746 HCAPLUS
 (3) Baensch, J; WO 9603057 1996 HCAPLUS
 (4) Chitumbo, K; J Pol Sci 1971, VC36, P297
 (5) Ellis, R; J Sci Food Agric 1998, V77, P289 HCAPLUS
 (6) Galliard, T; Starch: Properties and potential 1987, P1
 (7) Green, B; US 2800457 HCAPLUS
 (8) Gunther, W; WO 9725073 1997 HCAPLUS
 (9) Jane, J; J Macromol Sci Pure Appl Chem 1995, V4(A32), P751
 (10) Jiugao, Y; Starch 1994, V46, P252
 (11) Kulicke, W; Polym Mater Sci Engin 1987, V57, P265 HCAPLUS
 (12) Kulicke, W; Starch 1989, V41, P140 HCAPLUS
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 (14) Lycklema, J; Fundamentals of Interface and Colloidal Science, Chpt 2 VII
 (15) Porath, J; J Chrom 1971, V60, P167 HCAPLUS
 (16) Soest, J; WO 9901214 A1 1999 HCAPLUS
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 (19) van der Zee, M; Structure-biodegradability relationships of polymeric
 materials 1997, P1
 (20) Velazquez, J; WO 9955819 1999 HCAPLUS
 (21) Wolfe, M; J Coll Interface Sci 1989, V133, P265 HCAPLUS

L71 ANSWER 13 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 2001:228662 HCAPLUS

DN 134:265543

TI **Starch product**

IN Bergsma, Jacob; Aten, Jan; Bleeker, Ido Pieter

PA Coöperatieve Verkoop- en Productievereniging Van Aardappelmeel en
 Derivaten, Neth.

SO PCT Int. Appl., 21 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM A23L001-09

ICS A23L001-0522; C08B030-12; A61K009-48; C12P019-16

CC 17-6 (Food and Feed Chemistry)

Section cross-reference(s): 63

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001021011	A1	20010329	WO 2000-NL653	20000914
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				

PRAI EP 1999-203058 A 19990917

AB The invention relates to a process for prepg. a **starch** product,
 wherein native **starch** or **crosslinked starch**
 in substantially ungelatinized state is treated with a debranching enzyme.
 The invention further relates to a **starch** product obtainable by
 said process and the use thereof in foods and pharmaceutical compns.

ST **starch** debranched food drug
 IT Drugs
 (additives; **starch** product)
 IT Organelle
 (**starch** granule; **starch** product)
 IT Arrowroot
 Barley
 Cassava (*Manihot esculenta*)
 Corn
 Food additives
 Food rheology
 Food texture
 Oat
 Potato (*Solanum tuberosum*)
 Rice (*Oryza sativa*)
 Sago palm
 Wheat
 (**starch** product)
 IT 9075-68-7, Pullulanase
 RL: FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (Optimax 300L; **starch** product)
 IT 9000-90-2, .alpha.-Amylase
 RL: FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (maltogenic; **starch** product)
 IT **9005-25-8D, Starch**, debranched, biological studies
 9067-73-6, Isoamylase
 RL: FFD (Food or feed use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (**starch** product)

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE

- (1) Haralampu, S; US 5849090 A 1998 HCAPLUS
- (2) Holik, D; US 3922196 A 1975 HCAPLUS
- (3) Jane, J; CEREAL CHEMISTRY 1992, V69(4), P405 HCAPLUS
- (4) Kimura, A; CARBOHYDRATE RESEARCH 1996, V287, P255 HCAPLUS
- (5) Nat Starch Chem Invest; EP 0480433 A 1992 HCAPLUS
- (6) Nat Starch Chem Invest; EP 0616778 A 1994
- (7) Nat Starch Chem Invest; EP 0806434 A 1997 HCAPLUS
- (8) Wai-Chiu, C; US 5468286 A 1995 HCAPLUS

L71 ANSWER 14 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 2001:208135 HCAPLUS

DN 134:236644

TI Shear thickening **pregelatinized starch**

IN Brine, Charles J.; Tieleman, Anne E.; Wood, Robert W.

PA Avebe America, Inc., USA

SO PCT Int. Appl., 37 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM A61K047-36

ICS A23L001-0522; C08B030-00; C08L003-04; C08L003-06; C08L003-08

CC 17-6 (Food and Feed Chemistry)

Section cross-reference(s): 44

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001019404	A1	20010322	WO 2000-US25343	20000915
	WO 2001019404	C2	20021107		
	W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,			

KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW,
 MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR,
 TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ,
 CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

EP 1128846 A1 20010905 EP 2000-965046 20000915

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO

PRAI US 1999-154081P P 19990915

WO 2000-US25343 W 20000915

AB A new **starch** exhibits shear-thickening properties. It is a pregelatinized, cold water swelling **starch**, comprising: a highly **cross linked**, stabilized **starch** processed by heating to render it cold water swelling and leaving a majority of the **starch** granules intact. According to the process a highly **cross linked starch** is obtained. Then, the **starch** is heated under conditions of time, temp. and moisture effective to disrupt less than 50 % of intact **starch** granules comprised in said **starch** and to provide the characteristic that when a slurry of said **starch** is subjected to moderate to high shear the viscosity will increase toward a max. The **starch** is used in salad dressings and a skin lotion.

ST **starch** shear thickened pregelatinized

IT Arrowroot

Cassava (*Manihot esculenta*)

Cosmetics

Food

Mixing

Potato (*Solanum tuberosum*)

Yam (*Dioscorea*)

(shear thickening pregelatinized **starch**)

IT 9005-25-8, **Starch**, biological studies

RL: BUU (Biological use, unclassified); FFD (Food or feed use); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process); USES (Uses)

(shear thickening pregelatinized **starch**)

IT 7785-84-4, Sodium trimetaphosphate 10025-87-3, Phosphorus oxychloride

RL: RCT (Reactant); RACT (Reactant or reagent)

(shear thickening pregelatinized **starch**)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE.

(1) Pitchon; US 4280851 A 1981 HCAPLUS

(2) Schara; US 4847371 A 1989 HCAPLUS

L71 ANSWER 15 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 2000:808498 HCAPLUS

DN 133:355000

TI Cosmetic compositions containing modified **starch**

IN Grafe, Jurgen E.

PA Grafe Chemie G.m.b.H., Germany

SO Eur. Pat. Appl., 11 pp.

CODEN: EPXXDW

DT Patent

LA German

IC ICM A61K007-48

ICS A61K007-06

CC 62-4 (Essential Oils and **Cosmetics**)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI EP 1051967	A2	20001115	EP 2000-109712	20000508
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,

IE, SI, LT, LV, FI, RO
 DE 19921707 A1 20001116 DE 1999-19921707 19990512
 PRAI DE 1999-19921707 A 19990512
 AB Cosmetic compns. such as shower gels, conditioning shampoos, and creams contain modified **starch** in acceptable medium. The medium can be a shampoo contg. a surfactant. Thus, a shower gel contained coco betaine 10.00, Na laureth sulfate 33.50, PPG-5 laureth-5 4.00, dimethicone copolyol 4.00, cocoamide-DEA 3.50, modified **potato starch** 0.50, preservatives and perfumes and citric acid qs, and water to 100%.
 ST cosmetic modified **starch**
 IT Surfactants
 (anionic; cosmetic compns. contg. modified **starch**)
 IT Surfactants
 (cationic; cosmetic compns. contg. modified **starch**)
 IT **Shampoos**
 (conditioning; cosmetic compns. contg. modified **starch**)
 IT **Bath preparations**
Cosmetics
 Detergents
Shampoos
 (cosmetic compns. contg. modified **starch**)
 IT **Cosmetics**
 (creams; cosmetic compns. contg. modified **starch**)
 IT **Bath preparations**
 (gels; cosmetic compns. contg. modified **starch**)
 IT Carboxylic acids, biological studies
 RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
 (hydroxy; cosmetic compns. contg. modified **starch**)
 IT **Soaps**
 RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
 (liq.; cosmetic compns. contg. modified **starch**)
 IT **Cosmetics**
 (lotions; cosmetic compns. contg. modified **starch**)
 IT Surfactants
 (nonionic; cosmetic compns. contg. modified **starch**)
 IT 50-21-5, Lactic acid, biological studies 57-13-6, Urea, biological studies 72-17-3, Sodium lactate 77-92-9, Citric acid, biological studies 9005-25-8D, **Starch**, modified, biological studies
 RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
 (cosmetic compns. contg. modified **starch**)
 L71 ANSWER 16 OF 70 HCAPLUS COPYRIGHT 2003 ACS
 AN 2000:227385 HCAPLUS
 DN 132:252697
 TI **Potato starch amylopectin-based adhesives and preproducts**
 IN Wastyn, Marnik Michel; Kozich, Martin; Grull, Dietmar
 PA Sudzucker Aktiengesellschaft Mannheim/Ochsenfurt, Germany
 SO Eur. Pat. Appl., 21 pp.
 CODEN: EPXXDW
 DT Patent
 LA German
 IC ICM C09J103-12
 ICS C09J103-14; C08B035-00; C08B031-00
 CC 44-6 (Industrial Carbohydrates)
 Section cross-reference(s): 38
 FAN.CNT 1
 PATENT NO. KIND DATE APPLICATION NO. DATE

PI EP 990687 A2 20000405 EP 1999-890313 19990930
EP 990687 A3 20001102
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO
PRAI AT 1998-1636 A 19981001
AB **Adhesives** which can be dried by evapn. of moisture are based on
amylopectin derived from **potato starch**, and
can also contain appropriate additives. An **adhesive** contg.
dextrinated **amylopectin** 300, hydrolyzed **amylopectin**
400, H2O 300, and preservative 0.3 g had viscosity 3.420 Pa-s at
23.degree..
ST **potato starch amylopectin adhesive**
; dextrinated **amylopectin adhesive**;
crosslinking amylopectin adhesive
IT Paperboard
(corrugated; **potato starch amylopectin**
-based **adhesives** for corrugated paperboard)
IT Books
(manuf., binding; **potato starch amylopectin**
-based **adhesives** for bookbinding)
IT **Adhesives**
(**potato starch amylopectin**-based
adhesives and preproducts)
IT Carpets
(**potato starch amylopectin**-based
adhesives for carpets)
IT Aldehydes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(reaction products with **amylopectin**; **crosslinked**
potato starch amylopectin-based
adhesives and preproducts)
IT 106-89-8D, Epichlorohydrin, reaction products with **amylopectin**
124-04-9D, Adipic acid, reaction products with **amylopectin**
RL: TEM (Technical or engineered material use); USES (Uses)
(**crosslinked potato starch**
amylopectin-based **adhesives** and preproducts)
IT 9037-22-3, **Amylopectin** 9037-22-3D,
Amylopectin, hydrolyzed and **crosslinked** 9074-24-2,
Carboxymethyl **amylopectin** 56448-79-4 74315-67-6D, degraded
80940-93-8, 2-Cyanoethyl **amylopectin** 101658-51-9, Methyl
amylopectin 202217-51-4, Ethyl **amylopectin**
262857-87-4, 2-Hydroxybutyl **amylopectin**
RL: TEM (Technical or engineered material use); USES (Uses)
(**potato starch amylopectin**-based
adhesives and preproducts)
L71 ANSWER 17 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN 2000:216444 HCAPLUS
DN 132:252650
TI Development of **crosslinked cationic starches**
and evaluation of their performance in the **microparticle**
retention system
AU Kim, Tae Young; Lee, Hak Lae
CS Department of Forest Products, College of Agriculture and Life Sciences,
Seoul National University, Suwon, 441-744, S. Korea
SO Polpu, Chongi Gisul (1999), 31(5), 24-30
CODEN: PCGIDY; ISSN: 0253-3200
PB Korea Technical Association of the Pulp and Paper Industry
DT Journal
LA English
CC 43-7 (Cellulose, Lignin, Paper, and Other Wood Products)
Section cross-reference(s): 44
AB **Crosslinked corn starch** (I) samples were prepd. to

increase their mol. wts. and their performance as a component of the Compozil microparticle retention system for papermaking was evaluated and compared with that of **potato** I samples. It was shown that greater improvements in retention and strength properties could be achieved when **crosslinked cationic** corn I was used rather than conventional **cationic potato** I, esp. at high cond., because of their mol. rigidity.

ST **cationic starch crosslinking** effect paper
fines retention strength

IT **Crosslinking**
Microparticles
Paper

Tensile strength
(**cationic starch crosslinking** effect on
fines retention and paper strength)

IT **9005-25-8, Starch**, reactions

RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(**cationic; cationic starch**
crosslinking effect on fines retention and paper strength)

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

- (1) Andersson, K; Nordic Pulp and Paper Research Journal 1996, V11(1), P18
- (2) Au, C; Pulp & Paper Canada 1993, V94(6), PT175
- (3) Beaudoin, R; JPPS 1995, V21(7), PJ238 HCAPLUS
- (4) Fitzgibbons, N; Papermakers Conference Proceedings 1994, P239
- (5) Glittenberg, D; Papermakers Conference Proceedings 1995, P197
- (6) Howard, R; JPPS 1989, V15(6) HCAPLUS
- (7) Moberg, K; Retention and Drainage Short Course Note 1989, P65
- (8) Moffett, R; Tappi J 1994, V77(12), P133 HCAPLUS
- (9) Swerin, A; Paperi ja Puu 1995, V77(4), P215 HCAPLUS
- (10) Wackerberg, E; Pulp & Paper Canada 1994, V95(7), PT44

L71 ANSWER 18 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 2000:134518 HCAPLUS

DN 132:141609

TI Water **purification** by **flocculation** and/or
coagulation

IN Gomes de Oliveira, Joao Carlos; Kiyoshiuchima, Milton
PA Brazil

SO Braz. Pedido PI, 13 pp.
CODEN: BPXXDX

DT Patent

LA Portuguese

IC ICM C02F001-52

CC 61-5 (Water)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	BR 9702430	A	19990309	BR 1997-2430	19970711
PRAI	BR 1997-2430		19970711		

AB Polluted waters are treated with **flocculation** and/or
coagulation agents (e.g., lime, ferric chloride, aluminum sulfate,
polymers, ETA salts, **potato starch**, etc.) and rapidly
mixed to form a floc. The water is aerated to improve
flocculation and the floc is removed. The process is adapted to a
continuously flowing stream.

ST water **flocculation coagulation**

IT Water **purification**
(**coagulation**; water purifn. by **flocculation** and/or
coagulation)

IT Water **purification**
(**flocculation**; water purifn. by **flocculation** and/or
coagulation)

IT Lime (chemical)
Polymers, uses
RL: NUU (Other use, unclassified); USES (Uses)
(water purifn. by **flocculation** and/or **coagulation**)

IT 60-00-4, EdTA, uses 7705-08-0, Ferric chloride, uses 9005-25-8
, **Starch**, uses 10043-01-3, Aluminum sulfate
RL: NUU (Other use, unclassified); USES (Uses)
(water purifn. by **flocculation** and/or **coagulation**)

L71 ANSWER 19 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:194185 HCAPLUS
DN 130:239097
TI Manufacture of absorbing material based on **starch** having
improved **absorbent properties**
IN Feil, Herman; Van Soest, Jeroen Johannes Gerardus; Van Schijndel, Renee
Josie Gide
PA Instituut voor Agrotechnologisch Onderzoek (Ato-Dlo), Neth.
SO PCT Int. Appl., 14 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C08B031-00
ICS A61L015-00
CC 44-6 (Industrial Carbohydrates)
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9912976	A1	19990318	WO 1998-NL510	19980907
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	EP 900807	A1	19990310	EP 1997-202735	19970905
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	AU 9890080	A1	19990329	AU 1998-90080	19980907
PRAI	EP 1997-202735		19970905		
	WO 1998-NL510		19980907		

AB A biodegradable polymer with high H₂O-absorbing capacity is based on **starch** or **starch** derivs. wherein the **starch** has not been chem. modified or only to a degree of substitution <0.2. The material has a H₂O-absorbing power of .gtoreq.10 times its own wt. and a half of the H₂O absorption is attained within 3 min. The material is manufd. by modifying and treating the **starch** in a co-continuous H₂O-oil or oil-H₂O system (an emulsion where both phases are continuous or quasi-continuous) in such a way that an open, slightly **crosslinked** structure is fixated. For example, dispersing granular **potato starch** in H₂O, adding Na₃P₃O₉, dispersing the mixt. with stirring in paraffin oil, adding 2M NaOH and neutralizing after 23 h with AcOH gave a product having H₂O absorption 89 g/g (in 2 h; 82% absorbed within the 1st h) and 0.9% aq. NaCl soln. absorption 20 g/g within 1 h (81% absorbed within the 1st 5 min).

ST **starch modification crosslinking** trisodium trimetaphosphate absorbent manuf; sodium trimetaphosphate **crosslinking starch** absorbent manuf; water oil emulsion **starch modification crosslinking** trisodium trimetaphosphate absorbent

IT Biodegradable materials
(absorbents; manuf. of absorbing material based on trisodium

trimetaphosphate-**crosslinked starch**)

IT Absorbents
(biodegradable; manuf. of absorbing material based on trisodium trimetaphosphate-**crosslinked starch**)

IT Edible oils
Paraffin oils
RL: NUU (Other use, unclassified); USES (Uses)
(manuf. of absorbing material by **crosslinking starch** with trisodium trimetaphosphate in emulsion system comprising water and)

IT 7785-84-4DP, Trisodium trimetaphosphate, reaction products with maltodextrin **9005-25-8DP, Starch**, reaction products with trisodium trimetaphosphate, preparation 9050-36-6DP, Paselli SA 2, reaction products with trisodium trimetaphosphate 9057-06-1DP, Carboxymethyl **starch**, reaction products with trisodium trimetaphosphate
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**crosslinked**; manuf. of absorbing material based on **starch** having improved absorbent properties)

IT 26658-19-5, Span 65
RL: NUU (Other use, unclassified); USES (Uses)
(emulsifier; manuf. of absorbing material by **crosslinking starch** with trisodium trimetaphosphate in hydrophobic liq./water emulsion system contg.)

IT 7732-18-5, Water, uses
RL: NUU (Other use, unclassified); USES (Uses)
(manuf. of absorbing material by **crosslinking starch** with trisodium trimetaphosphate in emulsion system comprising hydrophobic liq. and)

IT 110-82-7, Cyclohexane, uses 124-07-2, Octanoic acid, uses
RL: NUU (Other use, unclassified); USES (Uses)
(manuf. of absorbing material by **crosslinking starch** with trisodium trimetaphosphate in emulsion system comprising water and)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

- (1) Aktiebolaget Pharmacia; DE 1292883 B 1969 HCAPLUS
- (2) Nichiden Kagaku, K; JP 56014571 A 1981 HCAPLUS
- (3) Nippon Shokubai Co; EP 0637594 A 1995 HCAPLUS
- (4) Seitetsu Kagaku; EP 0083022 A 1983
- (5) Unilever; GB 1508123 A 1978 HCAPLUS

L71 ANSWER 20 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1999:193942 HCAPLUS

DN 130:239100

TI Process for modifying amylaceous materials, the products and their **applications**, especially for the manufacture of paper, **adhesives** and gels

IN Fuertes, Patrick; Lambin, Anne

PA Roquette Freres, Fr.

SO Eur. Pat. Appl., 13 pp.

CODEN: EPXXDW

DT Patent

LA French

IC ICM C08B030-12

ICS D21H017-29; C08B031-12

CC 44-8 (Industrial Carbohydrates)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 902037	A1	19990317	EP 1998-402209	19980908
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,				

IE, SI, LT, LV, FI, RO

FR 2768432	A1	19990319	FR 1997-11383	19970912
FR 2768432	B1	20010406		
CA 2247527	AA	19990312	CA 1998-2247527	19980909
US 6469161	B1	20021022	US 1998-150680	19980910
PRAI FR 1997-11383	A	19970912		

AB The solid phase, chem. fluidization process to produce modified **starch** comprises acid hydrolysis of the amylaceous material; the process is carried out for 6 to 28 min at 65-90.degree., preferably 6-25 min at 65 to 85.degree. and the feedstock may consist of mixts. of crude **starch**, flour, and modified **starches**, e.g., products from **etherification**, **esterification**, sulfonation, oxidn., **cationization**, hydroxylation, or acetylation of **starch**. One **cationic** product in dry powder form has a fluidity index of 70-90 in water and a fixed N content of at least 0.30% and less than 0.50%, preferably 0.30-0.48%; another **cationic** product in powder form has a fluidity index of 65-90% in water and a fixed N content of 0.04 to 0.12%, preferably 0.05-0.10%. A **cationic** product in dry powder form, obtained from wheat or **potato starch** has fluidity index of 65-90% and fixed N content of 0.20 to 2%, preferably 0.22 to 1%. The products may be used a sizing for paper or textiles, in **adhesive** formulations, in construction material, detergents, food, pharmaceuticals, and cosmetics. Thus, in a high speed mixing app. **starch** powder was mixed with 10% HCl soln., the mixt. was heated to 52.degree. and placed in a continuous piston-flow reactor for 3 h to complete hydrolysis; the product was removed from the reactor and neutralized with 10% Na₂CO₃ soln. to pH of about 6; the reactor conditions, e.g., residence time, are not suitable for a good piston-flow effect to develop.

ST **starch modification** acid hydrolysis viscosity product; fluidity index modified **starch** acid hydrolysis piston flow reactor

IT Hydrolysis
(acid; acid hydrolysis process to obtain modified **starches** with fluidity characteristics for use as paper coatings and sizes and **adhesives** and gels)

IT Paper
(coated, **starch**; acid hydrolysis process to obtain modified **starches** with fluidity characteristics for use as paper coatings and sizes and **adhesives** and gels)

IT Viscosity
(fluidity index; acid hydrolysis process to obtain modified **starches** with fluidity characteristics for use as paper coatings and sizes and **adhesives** and gels)

IT Reactors
(plug-flow; acid hydrolysis process to obtain modified **starches** with fluidity characteristics for use as paper coatings and sizes and **adhesives** and gels)

IT Fluidization
(solid-phase; acid hydrolysis process to obtain modified **starches** with fluidity characteristics for use as paper coatings and sizes and **adhesives** and gels)

IT 9005-25-8DP, **Starch**, acid hydrolysis products, preparation
RL: IMF (Industrial manufacture); PREP (Preparation)
(acid hydrolysis process to obtain modified **starches** with fluidity characteristics for use as paper coatings and sizes and **adhesives** and gels)

IT 7647-01-0, Hydrogen chloride, uses
RL: NUU (Other use, unclassified); USES (Uses)
(hydrolysis reagent; acid hydrolysis process to obtain modified **starches** with fluidity characteristics for use as paper coatings and sizes and **adhesives** and gels)

IT 497-19-8, Sodium carbonate (Na₂CO₃), uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (neutralization reagent; acid hydrolysis process to obtain modified
starches with fluidity characteristics for use as paper
 coatings and sizes and **adhesives** and gels)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
 (1) Hasuly; US 4421566 A 1983 HCAPLUS
 (2) Hubbard; US 4373099 A 1983 HCAPLUS
 (3) Hunt; US 3962079 A 1976 HCAPLUS
 (4) National Starch And Chemical Corp; DE 1517085 A 1969
 (5) SociEtE Des Produits Du MaIs; FR 2076829 A 1971 HCAPLUS

L71 ANSWER 21 OF 70 HCAPLUS COPYRIGHT 2003 ACS
 AN 1998:708735 HCAPLUS
 DN 129:317857
 TI Production and use of powdered, substituted natural polymers
 IN Fischer, Wolfgang; Brossmer, Christian; Bischoff, Dietmar; Rubo, Andreas
 PA Degussa Aktiengesellschaft, Germany
 SO Eur. Pat. Appl., 15 pp.
 CODEN: EPXXDW
 DT Patent
 LA German
 IC ICM C08B037-00
 ICS C08B031-12; C08B011-145; C08B037-14; C02F001-56; C02F011-00;
 D21H017-26; D21H017-29; D21H017-32; A61K007-00; A61K047-36
 CC 44-6 (Industrial Carbohydrates)
 Section cross-reference(s): 43
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 874000	A2	19981028	EP 1998-105941	19980401
	EP 874000	A3	19990630		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	DE 19717030	A1	19981029	DE 1997-19717030	19970423
PRAI	DE 1997-19717030		19970423		

AB In the title process, giving polymers with degree of substitution >0.32,
 natural polymers (e.g., **starches**, cellulose, galactomannans) are
 treated with epoxides of specified structure bearing tertiary amino or
 quaternary ammonium groups. Intense mixing of native **potato**
starch (18% moisture) 10.000, activator [75:25 Ca(OH)₂-SiO₂]
 0.246, 73.5% aq. glycidyltrimethylammonium chloride 2.087, and H₂O 0.529
 kg and leaving the mixt. at 50.degree. for 1 day gave a product with DS
 0.179 (yield 89.4%). Repetition gave products with DS 0.353, 0.525,
 0.675, and 0.816, which were used as **flocculants**.

ST amino group substitution polymer; **flocculant** polymer natural
cationic; wastewater **flocculant** polymer **cationic**
 ; epoxide aminated reaction polymer; **starch** quaternary ammonium
 ether; quaternary ammonium ether polymer; glycidyltrimethylammonium
 chloride reaction **starch**

IT Wastewater treatment
 (**flocculation**; powd., substituted natural polymers as
flocculants for wastewater)

IT Polymers, preparation
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (natural, tertiary amino and quaternary ammonio ethers; prodn. and use
 of powd., substituted natural polymers)

IT Quaternary ammonium compounds, preparation
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (polymers; prodn. and use of powd., substituted natural polymers)

IT **Flocculants**
 (prodn. of powd., substituted natural polymers as **flocculants**)

)

IT Epoxides
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (tertiary amino- and quaternary ammonium group-contg.; reaction with natural polymers)

IT 9004-34-6DP, Cellulose, tertiary amino and quaternary ammonio ethers, preparation 11078-30-1DP, Galactomannan, tertiary amino and quaternary ammonio ethers
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (prodn. and use of powd., substituted natural polymers)

IT 56780-58-6P, 2-Hydroxy-3-(trimethylammonio)propyl **starch** chloride
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (prodn. and use of powd., substituted natural polymers)

IT **9005-25-8, Starch**, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction with glycidyltrimethylammonium chloride)

IT 3033-77-0, Glycidyltrimethylammonium chloride
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction with **starch**)

L71 ANSWER 22 OF 70 HCAPLUS COPYRIGHT 2003 ACS
 AN 1998:599363 HCAPLUS
 DN 129:218355
 TI Process for producing polysaccharides and their use as absorbent materials
 IN Cottrell, Ian William; Goswami, Animesh; **Chowdhary, Manjit Singh**
 PA Rhodia Inc., USA
 SO U.S., 9 pp., Cont. of U. S. Ser. No. 418,334, abandoned.
 CODEN: USXXAM
 DT Patent
 LA English
 IC ICM B01J020-00
 ICS B01J020-22; B01J020-26; A61F013-15
 NCL 502404000
 CC 47-2 (Apparatus and Plant Equipment)
 Section cross-reference(s): 33
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5801116	A	19980901	US 1997-880113	19970620
PRAI	US 1995-418334		19950407		

AB A solid compn. of matter comprising one or more polysaccharides which has a coarse particle size is provided. The compn. demonstrates absorbent properties and is useful in absorbent articles of manuf. Also provided is a method for prepg. the compns.

ST polysaccharide absorbent manuf
 IT Fibers
 RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
 (cellulosic; process for producing polysaccharides and their use as absorbent materials)

IT Polyesters, uses
 RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
 (glycolide-based; process for producing polysaccharides and their use as absorbent materials)

IT Polyesters, uses
 RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
 (lactide; process for producing polysaccharides and their use as absorbent materials)

IT Absorbents

Paper

Sphagnum

(process for producing polysaccharides and their use as absorbent materials)

IT Polysaccharides, uses

RL: IMF (Industrial manufacture); NUU (Other use, unclassified); PREP (Preparation); USES (Uses)

(process for producing polysaccharides and their use as absorbent materials)

IT Acrylic polymers, uses

RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)

(process for producing polysaccharides and their use as absorbent materials)

IT Carbohydrates, uses

RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)

(process for producing polysaccharides and their use as absorbent materials)

IT Carboxylic acids, uses

RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)

(process for producing polysaccharides and their use as absorbent materials)

IT Clays, uses

RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)

(process for producing polysaccharides and their use as absorbent materials)

IT Diatomite

RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)

(process for producing polysaccharides and their use as absorbent materials)

IT Gelatins, uses

RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)

(process for producing polysaccharides and their use as absorbent materials)

IT Polyamides, uses

RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)

(process for producing polysaccharides and their use as absorbent materials)

IT Polyesters, uses

RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)

(process for producing polysaccharides and their use as absorbent materials)

IT Polyoxyalkylenes, uses

RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)

(process for producing polysaccharides and their use as absorbent materials)

IT Polysiloxanes, uses

RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)

(process for producing polysaccharides and their use as absorbent materials)

IT Proteins, general, uses

RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)

(soybean; process for producing polysaccharides and their use as

absorbent materials)

IT 50-21-5, Lactic acid, uses 50-21-5D, Lactic acid, salts 50-70-4, Sorbitol, uses 50-99-7, Glucose, uses 56-81-5, Glycerol, uses 56-84-8, Aspartic acid, uses 56-84-8D, Aspartic acid, salts 56-86-0, Glutamic acid, uses 56-86-0D, Glutamic acid, salts 57-48-7, Fructose, uses 57-50-1, Sucrose, uses 57-55-6, Propylene glycol, uses 58-86-6, Xylose, uses 59-23-4, Galactose, uses 63-42-3, Lactose 64-17-5, Ethanol, uses 64-18-6, Formic acid, uses 64-18-6D, Formic acid, salts, uses 64-19-7, Acetic acid, uses 64-19-7D, Acetic acid, salts, uses 65-85-0, Benzoic acid, uses 65-85-0D, Benzoic acid, salts, uses 67-56-1, Methanol, uses 69-65-8, Mannitol 69-79-4, Maltose 77-92-9, Citric acid, uses 77-92-9D, Citric acid, salts 79-14-1, Glycolic acid, uses 79-14-1D, Glycolic acid, salts 87-69-4, Tartaric acid, uses 87-69-4D, Tartaric acid, salts, uses 87-79-6, Sorbose 87-99-0, Xylitol 88-99-3, Phthalic acid, uses 88-99-3D, Phthalic acid, salts 89-05-4, 1,2,4,5-Benzene tetracarboxylic acid 89-05-4D, 1,2,4,5-Benzene tetracarboxylic acid, salts 90-80-2, Glucono-.delta.-lactone 107-21-1, Ethylene glycol, uses 110-15-6, Succinic acid, uses 110-15-6D, Succinic acid, salts 110-16-7, Maleic acid, uses 110-16-7D, Maleic acid, salts 110-17-8, Fumaric acid, uses 110-17-8D, Fumaric acid, salts 144-62-7, Oxalic acid, uses 144-62-7D, Oxalic acid, salts 499-40-1, Isomaltose 526-95-4, Gluconic acid 1344-28-1, Alumina, uses 3458-28-4, Mannose 6556-12-3, Glucuronic acid 7631-86-9, Silica, uses 9000-30-0, Guar gum 9002-88-4, Polyethylene 9002-89-5, Polyvinyl alcohol 9003-01-4, Polyacrylic acid 9003-01-4D, Polyacrylic acid, salts 9003-01-4D, Polyacrylic acid, **starch**-grafted 9003-05-8, Polyacrylamide 9003-07-0, Polypropylene 9003-53-6, Polystyrene 9004-35-7, Cellulose acetate 25322-68-3, Polyethylene glycol 25322-69-4, Polypropylene glycol 25513-46-6, Polyglutamic acid 25513-46-6D, Polyglutamic acid, salts 25608-40-6, Polyaspartic acid 25608-40-6D, Polyaspartic acid, salts 26063-00-3, Polyhydroxybutyrate 39421-75-5, Hydroxypropyl guar 39454-79-0, Carboxymethyl hydroxypropyl guar 39465-11-7, Hydroxyethyl guar 51198-15-3, Carboxymethyl guar 65497-29-2, Guar hydroxypropyltrimonium chloride 102190-94-3
RL: NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)

(process for producing polysaccharides and their use as absorbent materials)

RE.CNT 62 THERE ARE 62 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Anon; GB 1331964 1970
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- (54) Takebe; US 4084591 1978
- (55) Tanaka; US 4732930 1988 HCAPLUS
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L71 ANSWER 23 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1998:429007 HCAPLUS

DN 129:71911

TI New polysaccharide derivatives for body care

AU Cottrell, Ian W.; Chowdhary, Manjit; Chandran, Rama; Ghahari, Masoomah; Koltai, Kim; Martino, Gary

CS Natinal Starch Chemical, Bridgewater, NJ, USA

SO Parfuemerie und Kosmetik (1998), 79(6), 7-10,12

CODEN: PAKOAL; ISSN: 0031-1952

PB Huethig GmbH

DT Journal; General Review

LA German

CC 62-0 (Essential Oils and Cosmetics)

AB A review with 11 refs. is given on performance features of amphoteric guar polysaccharides for their use in body care products including polysaccharides as conditioning agents, high functionality of amphoteric guar derivs., control of substantivity and build-up in hair care products, control of turbidness and surfactant compatibility, wet combing capability and electrostatic load, and control of dispersity.

ST body care guar polysaccharide review

IT Cosmetics

Cosmetics

(cleansing creams; new polysaccharide derivs. for

body care)

IT **Cosmetics**
 (conditioners; new polysaccharide derivs. for body care)

IT Polysaccharides, biological studies
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
 (derivs.; new polysaccharide derivs. for body care)

IT Amphoteric materials
Hair preparations
 (new polysaccharide derivs. for body care)

IT 9000-30-0, Guar
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
 (new polysaccharide derivs. for body care)

L71 ANSWER 24 OF 70 HCAPLUS COPYRIGHT 2003 ACS
 AN 1998:367974 HCAPLUS
 DN 129:29318
 TI **Potato pulp: properties, physical modification and applications**
 AU Mayer, Frank
 CS Institut fur Mikrobiologie der Georg-August-Universitat, Gottingen, D-37077, Germany
 SO Polymer Degradation and Stability (1998), 59(1-3), 231-235
 CODEN: PDSTDW; ISSN: 0141-3910
 PB Elsevier Science Ltd.
 DT Journal
 LA English
 CC 44-8 (Industrial Carbohydrates)
 Section cross-reference(s): 38, 43

AB **Potato starch** (I) prodn. includes, as an undesired side-effect, the generation of huge amts. of a pulpy mass comprising water, cell debris, and intact I cells. Chem. analyses of the pulp revealed the presence of I, cellulose, hemicellulose, pectin, free amino acids, oligopeptides, polypeptides, and ash. Part of the pulp can be used as cattle feed, but most of it has to be considered as an agricultural waste. Besides studies on **identification** and activities of bacteria and fungi contaminating the pulp, an approach was developed for a tech. use of this waste material as an **adhesive**. The pulp is 1st autoclaved, then treated by pressure release, and finally dried into a fine-grain powder which can be stored at room temp. Tests of **applications** as the sole **adhesive**, omitting any other **adhesive**, e.g. **adhesive** based on HCHO-urea, for the prodn. of particle- and fiberboards, small containers, etc., were successful.

ST **potato starch pulp adhesive** fiberboard
 particleboard

IT **Adhesives**
 Fiberboards
 (adhesives from **potato starch** pulp for fiber- and particleboards)

IT Construction materials
 (particleboards; **adhesives** from **potato starch** pulp for fiber- and particleboards)

IT 9005-25-8P, **Starch**, preparation
 RL: NUU (Other use, unclassified); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
 (adhesives from **potato starch** pulp for fiber- and particleboards)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
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 (2) Kempf, W; Starch/Starke 1980, V32, P14 HCAPLUS

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 (4) Mayer, F; Patent number 195 09 633 1997
 (5) Weiland, P; AICHEMA 1991 1991

L71 ANSWER 25 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1998:176239 HCAPLUS

DN 128:205879

TI Modified **starch** for sizes of **glass fibers**

IN Nakajima, Toru; Watanabe, Yoshihiro

PA Nippon Starch Refining Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C03C025-02

CC 40-7 (Textiles and Fibers)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10072243	A2	19980317	JP 1996-247089	19960828
PRAI	JP 1996-247089		19960828		
AB	The sizes comprise 5-95% modified starch having viscosity of 5% aq. soln. 1-5 cP at 60.degree. and 5-95% another modified starch having the viscosity 6-50 cP. The modified starch may be hydrolyzed, etherified, esterified, grafted, and/or crosslinked corn, tapioca, wheat, sweet potato , potato , or high- amylose corn starch . Thus, a glass fiber yarn sized with a compn. of hydrolyzed corn starch (viscosity 2 cP) 2.0, another hydrolyzed corn starch (viscosity 10 cP) 3.0, paraffin wax 1.5, hydrogenated cottonseed oil 0.2, cationic lubricant 0.4, and HCHO 0.1% showed reduced powdering and fuzzing.				
ST	glass fiber size hydrolyzed starch				
IT	Sizes (agents) (modified starch for sizing of glass fibers with reduced powdering and fuzzing)				
IT	Glass fibers, properties RL: PRP (Properties) (modified starch for sizing of glass fibers with reduced powdering and fuzzing)				
IT	9005-25-8D, Starch , modified, uses RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses) (modified starch for sizing of glass fibers with reduced powdering and fuzzing)				

L71 ANSWER 26 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1997:692690 HCAPLUS

DN 127:336564

TI Surface **modification** of water-insoluble drug particles with **starch**

AU Rein, Hubert; Steffens, Klaus J.

CS Rheinische Friedrich Wilhelms. Universitat, Bonn, D-53121, Germany

SO Starch/Staerke (1997), 49(9), 364-371

CODEN: STARDD; ISSN: 0038-9056

PB Wiley-VCH

DT Journal

LA English

CC 63-5 (Pharmaceuticals)

AB Parenterally applied, water-insol. drug particles are better tolerated if the a. particle surface is hydrophil enough, b. surface-charge (measured as .zeta.-potential) in physiol. liqs. does not exceed + 8 mV resp. -8 mV.

It is possible to coat lipophilic drug particles with a thin - hydrophilic-**amylose** film by a new, only temp.-controlled setback technique. Thus, it is not necessary to use any unphysiol. agents such as monomers or org. solvents. This process requires **starches** with low setback-temp. (TR), e.g. Schneeapfel - (TR 49.degree.), banana (plantains) - (TR 54.degree.) and chickpea **starch** (TR 55.degree.) or one of the investigated tapioca **starches** (Maizena #A6, Tr 61.degree.). **Starches** with higher setback-temp. (cave: particle growth), e.g. lentil- and plantains **starch** (TR 94.degree.) are not recommended. **Potato starches** (Sudstarke, Roquette, Emsland, Klenk) do not retrograde at lowering temp. Therefore, these **starches** are not usable for the investigated set-back-method. **Amylose** coated particles show not only optimal surface-charge, but also a reduced sedimentation-velocity, caused by an enlarged hydrodynamic-diam.

ST hydrophilic **amylose** drug surface **modification**;
starch hydrophilic drug delivery

IT Drug delivery systems
(injections; surface **modification** of water-insol. drug particles with **starch**)

IT Hydrophilicity
Particle size
(surface **modification** of water-insol. drug particles with **starch**)

IT 9005-25-8, **Starch**, biological studies 9005-82-7
, **Amylose**

RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(surface **modification** of water-insol. drug particles with **starch**)

L71 ANSWER 27 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1997:542317 HCAPLUS

DN 127:210194

TI Make-up removing compositions comprising **starch** and a surface active agent

IN Willis, Edwin

PA Unilever PLC, UK; Unilever N.V.

SO PCT Int. Appl., 24 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM A61K007-02

CC 62-3 (Essential Oils and Cosmetics)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9728780	A1	19970814	WO 1997-EP203	19970115
	W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG			
	AU 9714440	A1	19970828	AU 1997-14440	19970115
PRAI	GB 1996-2611		19960209		
	WO 1997-EP203		19970115		
AB	A cosmetic compn. comprising a surface active agent (Markush structure given) and 5 to 40 wt.% particulate starch can be used to remove make-up. It has sensory properties comparable to cold creams and a foaming capacity comparable to a typical facial wash product on addn. of				

water. A make-up remover contained lauric acid 1.45, myristic acid 0.65, stearic acid 0.65, oleic acid 1.70, KOH 0.91, cocoamidopropyl betaine 4.95, ethylene diaminetetracetate 0.05, sodium chloride 4.50, cholesterol 0.02, sucrose fatty acid ester 0.01, and preservatives, perfume, water q.s. 100%.

ST makeup remover **starch** surfactant

IT Surfactants

RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(anionic; make-up removing compns. comprising **starch** and surface active agent)

IT Surfactants

RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(**cationic**; make-up removing compns. comprising **starch** and surface active agent)

IT Fatty acids, biological studies

RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(coco, 2-sulfoethyl esters, sodium salts, Jordapon CIUP; make-up removing compns. comprising **starch** and surface active agent)

IT Fatty acids, biological studies

RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(coco, esters, 2-sulfoethyl esters, sodium salts, Jordapon CIUP; make-up removing compns. comprising **starch** and surface active agent)

IT Plant (Embryophyta)

RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(exts.; make-up removing compns. comprising **starch** and surface active agent)

IT Carboxylic acids, biological studies

RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(hydroxy, .alpha.-, derivs.; make-up removing compns. comprising **starch** and surface active agent)

IT Alcohols, biological studies

Fatty acids, biological studies

RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(long-chain; make-up removing compns. comprising **starch** and surface active agent)

IT Abrasives

Essential oils

Esters, biological studies

Hydrotropes

Lipids, biological studies

Perfumes

Phospholipids, biological studies

Polyoxyalkylenes, biological studies

Sunscreens

Surfactants

Vitamins

Waxes

RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)

(make-up removing compns. comprising **starch** and surface active agent)

IT Cosmetics

Cosmetics

(**makeup removers**; make-up removing compns. comprising **starch** and surface active agent)

- IT Surfactants
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES
(Uses)
(nonionic; make-up removing compns. comprising **starch** and surface active agent)
- IT Fatty acids, biological studies
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES
(Uses)
(salts, coco, 2-sulfoethyl esters, sodium salts, Jordapon CIUP; make-up removing compns. comprising **starch** and surface active agent)
- IT Cassava (*Manihot esculenta*)
Corn
Potato (*Solanum tuberosum*)
Rice (*Oryza sativa*)
Sago palm
Sweet **potato**
Wheat
(**starch** from; make-up removing compns. comprising **starch** and surface active agent)
- IT Corn
(waxy, **starch** from; make-up removing compns. comprising **starch** and surface active agent)
- IT Surfactants
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES
(Uses)
(zwitterionic; make-up removing compns. comprising **starch** and surface active agent)
- IT 57-11-4, Octadecanoic acid, biological studies 57-50-1D, esters with fatty acids 107-43-7D, Betaine, cocoamidopropyl derivs. 112-80-1, Oleic acid, biological studies 143-07-7, Lauric acid, biological studies 544-63-8, Myristic acid, biological studies 9004-82-4, Sodium lauryl ether sulfate **9005-25-8, Starch**, biological studies 25322-68-3 25322-69-4, Polypropylene glycol 37318-31-3, Ryoto Sugar Ester S 270 194739-62-3, Tego-Betain CK
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES
(Uses)
(make-up removing compns. comprising **starch** and surface active agent)
- L71 ANSWER 28 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN **1997:439232** HCAPLUS
DN **127:126541**
TI Thermoplastic **starch** and drug delivery capsules
AU Stepto, R. F. T.
CS Polymer Science and Technology Group, Manchester Materials Science Center, University of Manchester and UMIST, Manchester, M1 7HS, UK
SO Polymer International (1997), 43(2), 155-158
CODEN: PLYIEI; ISSN: 0959-8103
PB Wiley
DT Journal
LA English
CC 63-6 (**Pharmaceuticals**)
AB The thermoplastics processing of natural hydrophilic polymers in the presence of water is a recent development with very wide possible **applications**. Eventually, oil-based polymer materials could be replaced in many **applications** by inexpensive, natural products from renewable resources. As with conventional thermoplastics, hydrophilic polymer melts may be processed by injection-molding and extrusion. The present contribution focuses on the injection-molding of **potato starch**. The basis of the processing is described. In addn., the rheol. behavior of the **starch**/water melts during processing is analyzed quant. to give apparent melt viscosities. The mech. properties of molded **starch** materials

and the drug delivery behavior of **starch** capsules are discussed.

ST thermoplastic **starch** drug delivery polymer capsule
 IT Drug delivery systems
 (capsules; thermoplastic **starch** and drug delivery capsules)
 IT Polymers, biological studies
 RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES
 (Uses)
 (hydrophilic; thermoplastic **starch** and drug delivery
 capsules)
 IT Molding
 (injection; thermoplastic **starch** and drug delivery capsules)
 IT 9002-88-4, Polyethylene 9005-25-8, **Starch**, biological
 studies
 RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES
 (Uses)
 (thermoplastic **starch** and drug delivery capsules)

L71 ANSWER 29 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1996:655001 HCAPLUS

DN 125:284689

TI Pharmaceutical **application** of **starch** isolated from
 Nelumbo nucifera Gaertn (Fam. Nymphaeaceae)

AU Mukherjee, Pulok K.; Giri, S. N.; Saha, Kakali; Dutta, M. S.; Pal, M.;
 Saha, B. P.

CS Faculty Engineering and Technology, Jadavpur University, Calcutta, 700
 032, India

SO Indian Journal of Pharmaceutical Sciences (1996), 58(2), 59-66
 CODEN: IJSIDW; ISSN: 0250-474X

PB Indian Pharmaceutical Association

DT Journal

LA English

CC 63-5 (**Pharmaceuticals**)

AB A study was carried out to investigate the binding and disintegrating
 properties of **starch** isolated from rhizomes of N. nucifera
 (Nelumbo **starch**) along with the dissoln. rate profiles. For
 this study, the tablets of paracetamol (500 mg), metronidazole (400 mg)
 and ibuprofen (400 mg) were prep'd. using corn, Nelumbo and **potato**
starches, each in batches of 200. All the products met the
 requirement of in vitro parameters such as uniformity of wt., assay,
 friability and hardness as per the pharmacopeial requirements. These
 products also conformed to the dissoln. **specification** of USP.
 The amts. of Nelumbo **starch** required as a binder and
 disintegrant was one-half of the amt. of corn and **potato**
starch. Therefore Nelumbo **starch** can be effectively
 used in tablet manuf.

ST **starch** Nelumbo tablet

IT Nelumbo nucifera

Solution rate

 (pharmaceutical **application** of **starch** from Nelumbo
 nucifera)

IT 9005-25-8, **Starch**, biological studies

RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP
 (Properties); THU (Therapeutic use); BIOL (Biological study); OCCU
 (Occurrence); USES (Uses)

 (pharmaceutical **application** of **starch** from Nelumbo
 nucifera)

IT 103-90-2, Paracetamol 443-48-1, Metronidazole 15687-27-1, Ibuprofen

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)

 (pharmaceutical **application** of **starch** from Nelumbo
 nucifera)

L71 ANSWER 30 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1996:618680 HCAPLUS

and the drug delivery behavior of **starch** capsules are discussed.

ST thermoplastic **starch** drug delivery polymer capsule
 IT Drug delivery systems
 (capsules; thermoplastic **starch** and drug delivery capsules)
 IT Polymers, biological studies
 RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES
 (Uses)
 (hydrophilic; thermoplastic **starch** and drug delivery
 capsules)
 IT Molding
 (injection; thermoplastic **starch** and drug delivery capsules)
 IT 9002-88-4, Polyethylene 9005-25-8, **Starch**, biological
 studies
 RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES
 (Uses)
 (thermoplastic **starch** and drug delivery capsules)

L71 ANSWER 29 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1996:655001 HCAPLUS

DN 125:284689

TI Pharmaceutical **application** of **starch** isolated from
 Nelumbo nucifera Gaertn (Fam. Nymphaeaceae)

AU Mukherjee, Pulok K.; Giri, S. N.; Saha, Kakali; Dutta, M. S.; Pal, M.;
 Saha, B. P.

CS Faculty Engineering and Technology, Jadavpur University, Calcutta, 700
 032, India

SO Indian Journal of Pharmaceutical Sciences (1996), 58(2), 59-66

CODEN: IJSIDW; ISSN: 0250-474X

PB Indian Pharmaceutical Association

DT Journal

LA English

CC 63-5 (**Pharmaceuticals**)

AB A study was carried out to investigate the binding and disintegrating
 properties of **starch** isolated from rhizomes of N. nucifera
 (Nelumbo **starch**) along with the dissoln. rate profiles. For
 this study, the tablets of paracetamol (500 mg), metronidazole (400 mg)
 and ibuprofen (400 mg) were prepd. using corn, Nelumbo and **potato**
starches, each in batches of 200. All the products met the
 requirement of in vitro parameters such as uniformity of wt., assay,
 friability and hardness as per the pharmacopeial requirements. These
 products also conformed to the dissoln. **specification** of USP.
 The amts. of Nelumbo **starch** required as a binder and
 disintegrant was one-half of the amt. of corn and **potato**
starch. Therefore Nelumbo **starch** can be effectively
 used in tablet manuf.

ST **starch** Nelumbo tablet

IT Nelumbo nucifera

Solution rate

(pharmaceutical **application** of **starch** from Nelumbo
 nucifera)

IT 9005-25-8, **Starch**, biological studies

RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP
 (Properties); THU (Therapeutic use); BIOL (Biological study); OCCU
 (Occurrence); USES (Uses)

(pharmaceutical **application** of **starch** from Nelumbo
 nucifera)

IT 103-90-2, Paracetamol 443-48-1, Metronidazole 15687-27-1, Ibuprofen

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(pharmaceutical **application** of **starch** from Nelumbo
 nucifera)

L71 ANSWER 30 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1996:618680 HCAPLUS

DN 125:257195
 TI Manufacture of dosage forms with modified **starch** based on its particle characteristics
 IN Hirooka, Shoichi; Kamata, Sunao
 PA Gunei Kagaku Kogyo Kk, Japan
 SO Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM A61K047-36
 ICS C08B030-00
 CC 63-6 (Pharmaceuticals)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 08208523	A2	19960813	JP 1995-39009	19950203
PRAI	JP 1995-39009		19950203		

AB Manuf. of pharmaceutical dosage forms (powders, granules, tablets) use modified flat-shaped or particular **starch** obtained by **modification** with compressing force, impact force, cutting force and/or crushing force and having sp. surface areas .gtoreq.2.5-fold greater than those of untreated **starch**. **Starch** is selected from corn **starch**, **potato starch**, rice **starch** and wheat **starch**. The prepns. showed improved hydrophilicity and enzymic degradability.
 ST drug formulation **starch** particle
 IT Particle size
 (manuf. of dosage forms with modified **starch** based on its particle characteristics)
 IT Wheat
 (**starch**; manuf. of dosage forms with modified **starch** based on its particle characteristics)
 IT Pharmaceutical dosage forms
 (granules, manuf. of dosage forms with modified **starch** based on its particle characteristics)
 IT Pharmaceutical dosage forms
 (powders, manuf. of dosage forms with modified **starch** based on its particle characteristics)
 IT Pharmaceutical dosage forms
 (tablets, manuf. of dosage forms with modified **starch** based on its particle characteristics)
 IT 9005-25-8, **Starch**, biological studies
 RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (manuf. of dosage forms with modified **starch** based on its particle characteristics)

L71 ANSWER 31 OF 70 HCAPLUS COPYRIGHT 2003 ACS
 AN 1996:328762 HCAPLUS
 DN 125:67529
 TI An in vitro assessment of liquid-filled Capill **potato starch** capsules with biphasic release characteristics
 AU Burns, S. J.; Corness, D.; Hay, G.; Higginbottom, S.; Whelan, I.; Attwood, D.; Barnwell, S. G.
 CS Cortecs Limited, Research and Development Division, Techbase 1, Newtech Square, Deeside Industrial Park, Deeside Clywd, CH5 2NT, UK
 SO International Journal of Pharmaceutics (1996), 134(1,2), 223-230
 CODEN: IJPHDE; ISSN: 0378-5173
 PB Elsevier
 DT Journal
 LA English
 CC 63-6 (Pharmaceuticals)
 AB This paper describes the first use of liq.-filled Capill **potato**

starch capsules formulated for biphasic release and reports the development of dissoln. methods suitable for assessment of drug release from this type of dosage vehicle. The liq. filling of Capill capsules was made possible by overcoming the problem of incomplete sealing of the Capill cap and body which initially resulted in leakage of liq. capsule contents. This was achieved by **modification** of the formulation to incorporate a thermosoftening agent which remained solid below 30.degree.C, but melted at 37.degree.C. The use of enteric-coated liq.-filled Capill capsules formulated for biphasic release required further development of the dissoln. method to incorporate a dissoln. medium contg. bile acids at a concn. of 14 mM to produce a similar release profile to that seen from enteric-coated hard gelatin capsules contg. the same formulation. The concn. of bile salts used is in agreement with the acceptable range previously validated for use with enteric-coated hard gelatin capsules while also remaining within the physiol. levels of bile acids found in vivo.

ST Capill **starch** capsule drug release

IT Solution rate

(in vitro assessment of liq.-filled Capill **potato starch** capsules with biphasic release characteristics)

IT Glycerides, biological studies

RL: PEP (Physical, engineering or chemical process); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(in vitro assessment of liq.-filled Capill **potato starch** capsules with biphasic release characteristics)

IT Pharmaceutical dosage forms

(capsules, sustained-release, in vitro assessment of liq.-filled Capill **potato starch** capsules with biphasic release characteristics)

IT 9005-25-8, **Starch**, biological studies 148046-81-5, Gelucire 33/01

RL: PEP (Physical, engineering or chemical process); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(in vitro assessment of liq.-filled Capill **potato starch** capsules with biphasic release characteristics)

L71 ANSWER 32 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1996:328742 HCAPLUS

DN 125:67528

TI A new generation of **starch** products as excipient in pharmaceutical tablets. I. Preparation and binding properties of high surface area **potato starch** products

AU te Wierik, G. H. P.; Bergsma, J.; Arends-Scholte, A. W.; Boersma, T.; Eissens, A. C.; Lerk, C. F.

CS Groningen Institute for Drug Studies (GIDS), Department of Pharmaceutical Technology and Biopharmacy, University of Groningen, Ant. Deusinglaan 1, AV Groningen, 9713, Neth.

SO International Journal of Pharmaceutics (1996), 134(1,2), 27-36
CODEN: IJPHDE; ISSN: 0378-5173

PB Elsevier

DT Journal

LA English

CC 63-6 (Pharmaceuticals)

AB A new pharmaceutical excipient with a high binding capacity was prepd. from **potato starch** by enzymic degrdn., followed by suitable dehydration of the pptd. and filtered retrograded **starch** to produce high sp. surface area products. Thermal dehydration methods like drying at room or elevated temp. and spray-drying resulted in particulate solids with low sp. surface area, as measured by nitrogen adsorption, and low compactibility. Both freeze-drying and chem. **desiccation**, like washing with ethanol or acetone, produced powders with strongly increased sp. surface area and increased binding capacity. The compactibility of the final products showed a pos.

correlation with the sp. surface area, changing at high surface areas into const. compactibility. Moreover, the binding capacity appeared to increase with the moisture content of the products.

ST **starch** binding surface area tablet

IT Dehydration, chemical

Surface area

(prepn. and binding properties of high surface area **potato**

starch products for tablets)

IT Pharmaceutical dosage forms

(tablets, prepn. and binding properties of high surface area

potato starch products for tablets)

IT 9005-25-8, **Starch**, biological studies

RL: PEP (Physical, engineering or chemical process); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)

(prepn. and binding properties of high surface area **potato**

starch products for tablets)

L71 ANSWER 33 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1996:200141 HCAPLUS

DN 124:235377

TI **Flocculant** composition containing modified **starch**

IN Maczynski, Marian; Gzyl, Piotr; Szymanska, Grazyna; Voelkel, Ewa;

Kaczmarek, Leszek; Blaschke, Zofia; Makles, Daniel

PA Centralne Laboratorium Przemyslu Ziemniaczanego, Pol.

SO Pol., 5 pp.

CODEN: POXXA7

DT Patent

LA Polish

IC ICM C08L003-04

ICS B03D003-06

CC 44-6 (Industrial Carbohydrates)

Section cross-reference(s): 60

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PL 167424	B1	19950930	PL 1991-289363	19910308
PL 1991-289363		19910308		

PI PL 167424 B1 19950930 PL 1991-289363 19910308

PRAI PL 1991-289363 19910308

AB The title compn., useful esp. for treatment of wastewaters from coal or ore mining, comprises 40-95% **starch** modified with oxidn. agents or mixts. of alkali metal and/or Mg hydroxides, carbonates, chlorides, borates, and/or sulfates, and 5-60% of a linear or branched polymer as synthetic **flocculant**. The modified **starch** has increased capacity for binding H₂O. Thus, 100 kg **potato** flour was suspended in 150 L H₂O at 55.degree., the suspension was mixed with Na₃PO₄ 0.5, trimetaphosphate 0.2, NaCl 1.0, Na₂CO₃ 0.5, and NaOH 0.3 kg, the mixt. was stirred for 2 h at 50.degree., the **starch** was sepd. from the liquor by filtration, washed with H₂O, resuspended in H₂O, the pH adjusted to 6.5 (aq. HCl), and the product sepd. by filtration and dried. A title compn. was manufd. by dry blending 15 parts Quaker N 6116 AP (a polyacrylamide-based **flocculant**) with 85 parts of the above **starch**.

ST **starch** modification flocculating agent

manuf; polyacrylamide deriv modified **starch** blend

flocculant; phosphate salt **starch** modification

flocculant manuf; trimetaphosphate **starch**

modification **flocculant** manuf; hydroxide **starch**

modification **flocculant** manuf

IT Wastewater treatment

(**flocculation**, from coal or ore mining, modified

starch-synthetic polymer blends as agents for;

flocculant compn. contg. modified **starch**)

IT **Flocculating** agents

(water-sol., modified **starch**-synthetic polymer blends;

flocculant compn. contg. modified starch)
 IT 7722-84-1, Hydrogen peroxide, processes
 RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (30% aq. soln., **potato starch** modified with;
flocculant compn. contg. modified starch)
 IT 175069-64-4, N 6116AP
 RL: TEM (Technical or engineered material use); USES (Uses)
 (modified **starch** blends; **flocculant compn. contg. modified starch)**
 IT 497-19-8, Sodium carbonate, processes 1303-96-4, Borax 1310-73-2, Sodium hydroxide, processes 7487-88-9, Magnesium sulfate, processes 7601-54-9, Trisodium phosphate 7647-14-5, Sodium chloride, processes 13478-98-3, Hexametaphosphate 15705-55-2, Trimetaphosphate
 RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (**potato starch** modified with; **flocculant compn. contg. modified starch)**
 IT 9005-25-8DP, **Starch**, modified
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (with oxidn. agents or mixts. of alkali metal and/or Mg hydroxides, carbonates, chlorides, borates, and/or sulfates; **flocculant compn. contg. modified starch)**

L71 ANSWER 34 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1995:828566 HCAPLUS

DN 123:237910

TI Cross-linked polysaccharides used as absorbant materials

IN Cottrell, Ian William; **Chowdhary, Manjit Singh**; Goswami, Animesh

PA Rhone-Poulenc Specialty Chemicals Co., USA

SO Eur. Pat. Appl., 18 pp.

CODEN: EPXXDW

DT Patent

LA French

IC ICM A61L015-28

ICS A61L015-60

CC 63-7 (Pharmaceuticals)

Section cross-reference(s): 33

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 668078	A2	19950823	EP 1995-400287	19950213
	R: BE, CH, DE, FR, GB, IT, LI, NL, SE				
	US 5532350	A	19960702	US 1994-196357	19940215
	CA 2140979	AA	19950816	CA 1995-2140979	19950124
	JP 08059891	A2	19960305	JP 1995-15091	19950201
	ZA 9501086	A	19951207	ZA 1995-1086	19950210
	AU 9512203	A1	19950824	AU 1995-12203	19950213
	BR 9500630	A	19951031	BR 1995-630	19950214
PRAI	US 1994-196357		19940215		
	US 1994-274591		19940713		

AB Absorbant materials comprise cross-linked polysaccharides. Thus, 20 g guar carboxymethyl was dissolved in 2 L of 45-50.degree. water, then 2.25 mL of a soln. of zirconium sodium lactate was added thereto and the mixt. was then dried. The absorption capacity of the powder was 48.5 g/g.

ST crosslinked polysaccharide absorbant material; guar carboxymethyl crosslinked absorbant material; zirconium sodium lactate crosslinked absorbant material

IT Diatomeae

RL: NUU (Other use, unclassified); USES (Uses)

(cross-linked polysaccharides used as absorbant materials)

IT Acrylic polymers, biological studies

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(cross-linked polysaccharides used as absorbant materials)

IT Amino acids, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)

IT Anhydrides
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)

IT Carbohydrates and Sugars, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)

IT Carboxylic acids, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)

IT Gelatins, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)

IT Paper
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)

IT Peptides, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)

IT Polyamides, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)

IT Polyesters, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)

IT Polyoxymethylenes, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)

IT Polysaccharides, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)

IT Proteins, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)

IT Sphagnum
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)

IT Surfactants
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cross-linked polysaccharides used as absorbant materials)

IT Medical goods
(absorbents, cross-linked polysaccharides used as absorbant materials)

IT Alcohols, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(carboxy, cross-linked polysaccharides used as absorbant materials)

IT Fibers
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(cellulosic, cross-linked polysaccharides used as absorbant materials)

IT Polysaccharides, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(galactomannan-contg., cross-linked polysaccharides used as absorbant materials)

IT Carboxylic acids, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(hydroxy, cross-linked polysaccharides used as absorbant materials)

IT Polyesters, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(lactide, cross-linked polysaccharides used as absorbant materials)

IT Protein hydrolyzates
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(soya, cross-linked polysaccharides used as absorbant materials)
 IT 50-21-5, Lactic acid, uses 50-21-5D, Lactic acid, salts 56-81-5,
 1,2,3-Propanetriol, uses 56-84-8, Aspartic acid, uses 56-84-8D,
 Aspartic acid, salts 56-86-0D, Glutamic acid, salts 57-55-6,
 1,2-Propanediol, uses 64-17-5, Ethanol, uses 64-18-6, Formic acid,
 uses 64-18-6D, Formic acid, salts 64-19-7, Acetic acid, uses
 64-19-7D, Acetic acid, salts 65-85-0, Benzoic acid, uses 65-85-0D,
 Benzoic acid, salts 67-56-1, Methanol, uses 77-92-9, uses 77-92-9D,
 salts 79-14-1, uses 79-14-1D, salts 87-69-4, uses 87-69-4D, salts
 88-99-3, 1,2-Benzenedicarboxylic acid, uses 88-99-3D,
 1,2-Benzenedicarboxylic acid, salts 107-21-1, 1,2-Ethanediol, uses
 110-15-6, Butanedioic acid, uses 110-15-6D, Butanedioic acid, salts
 110-16-7, 2-Butenedioic acid (Z)-, uses 110-16-7D, 2-Butenedioic acid
 (Z)-, salts 110-17-8, 2-Butenedioic acid (E)-, uses 110-17-8D,
 2-Butenedioic acid (E)-, salts 121-44-8, uses 121-44-8D, salts
 144-62-7, Ethanedioic acid, uses 144-62-7D, Ethanedioic acid, salts
 476-73-3, Benzenel,2,3,4-tetracarboxylic acid 476-73-3D,
 Benzenel,2,3,4-tetracarboxylic acid, salts 1344-28-1, Alumina, uses
 24991-23-9 24991-23-9D, salts 25513-46-6, Polyglutamic acid
 25513-46-6D, Polyglutamic acid, salts 25608-40-6, Polyaspartic acid
 26063-13-8, Polyaspartic acid 62632-70-6

RL: NUU (Other use, unclassified); USES (Uses)

(cross-linked polysaccharides used as absorbant materials)
 IT 4229-34-9, Zirconium acetate 9000-30-0, Guar 12125-02-9, Ammonium
 chloride, reactions 15529-67-6, Sodiumzirconiumlactate 22829-17-0,
 Zirconium ammonium carbonate 39454-79-0, Carboxymethyl hydroxypropyl
 guar 51198-15-3, Carboxymethyl guar 60676-90-6, Zirconium lactate
 65497-29-2 72517-32-9 109768-37-8, Tyzor 131

RL: RCT (Reactant); RACT (Reactant or reagent)

(cross-linked polysaccharides used as absorbant materials)
 IT 50-70-4, D-Glucitol, biological studies 50-99-7, Glucose, biological
 studies 57-48-7, Fructose, biological studies 57-50-1, Saccharose,
 biological studies 58-86-6, Xylose, biological studies 59-23-4,
 Galactose, biological studies 63-42-3, Lactose 69-65-8, D-Mannitol
 69-79-4, Maltose 79-10-7D, 2-Propenoic acid, polymers with
starch, graft 87-79-6, Sorbose 87-99-0, Xylitol 90-80-2,
 Gluconolactone 526-95-4, Gluconic Acid 526-95-4D, Gluconic Acid, salts
 1398-61-4, Chitin 3458-28-4, Mannose 6556-12-3, Glucuronic acid
 6556-12-3D, Glucuronic acid, salts 7631-86-9, Silica, biological studies
 9000-01-5, Arabic gum 9000-07-1, Carragheenane 9000-36-6, Karaya gum
 9000-69-5, Pectin 9002-88-4, Polyethylene 9003-01-4, Polyacrylic acid
 9003-01-4D, Polyacrylic acid, salts 9003-05-8, Polyacrylamide
 9003-07-0, Polypropylene 9003-39-8, Pvp 9003-53-6, Polystyrene
 9004-34-6, Cellulose, biological studies 9004-35-7, Cellulose acetate
9005-25-8, Starch, biological studies 9005-32-7D,
 Alginic acid, compds. 9012-76-4, Chitosan 11138-66-2, Xanthan gum
 13718-94-0, Isomaltulose 25322-68-3 25322-69-4 26063-00-3,
 Polyhydroxybutyrate 26744-04-7 68424-04-4, Polydextrose 83120-66-5
 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(cross-linked polysaccharides used as absorbant materials)

L71 ANSWER 35 OF 70 HCAPLUS COPYRIGHT 2003 ACS
 AN 1994:10647 HCAPLUS
 DN 120:10647
 TI Process for dry cationization of starch
 IN Roerden, Dorothy L.; Wessels, Clara D.
 PA Dow Chemical Co., USA
 SO U.S., 7 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 IC ICM C08B031-08
 NCL 536050000

CC 44-6 (Industrial Carbohydrates)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5241061	A	19930831	US 1992-889688	19920527
PRAI	US 1992-889688		19920527		
OS	MARPAT 120:10647				
AB	Cationic starches useful for paper wet-end additives and mineral sepn. field are prepd. by the title process which used a cationizing agent comprising dialkyl(epoxyalkyl)amine or trialkyl(epoxyalkyl)ammonium halide in medium contg. .ltoreq.40% water in the presence of alkali metal or alk.-earth metal (hydr)oxide and a finely divided aluminosilicate clay of low cation -exchange capacity. Stirring a soln. of 3-chloro-2-hydroxypropyltrimethylammonium chloride with NaOH gave a 2,3-epoxypropyltrimethylammonium chloride. Adding potato starch to the soln. together with CaO and kaolin, and stirring gave a cationic starch deriv. contg. N 0.3579% at .apprx.90% yield.				
ST	dry cationization starch quaternary ammonium agent; paper wet end additive cationic starch				
IT	Alkali metal hydroxides Alkali metal oxides Alkaline earth hydroxides Alkaline earth oxides RL: CAT (Catalyst use); USES (Uses) (catalysts, for dry cationization of starch)				
IT	Pigments (for paper, retention aids for, cationic starch as, manuf. of)				
IT	Aluminosilicates, uses Kaolin, uses RL: USES (Uses) (in dry cationization of starch)				
IT	Flocculating agents Paper Sizes (wet end additives for, cationic starch as, manuf. of)				
IT	Amines, uses RL: USES (Uses) (epoxy, dry cationization of starch by)				
IT	Quaternary ammonium compounds, uses RL: USES (Uses) (epoxy group-contg., dry cationization of starch by)				
IT	1305-78-8, Calcium oxide, uses RL: CAT (Catalyst use); USES (Uses) (catalysts, for dry cationization of starch)				
IT	3327-22-8, 3-Chloro-2-hydroxypropyltrimethylammonium chloride 35649-00-4 RL: PROC (Process) (conversion of, to epoxy compd.)				
IT	3033-77-0P, 2,3-Epoxypropyltrimethylammonium chloride RL: PREP (Preparation) (prepn. and dry cationization of starch by)				
IT	9005-25-8DP, Starch, cationic additives, preparation 56780-58-6P RL: PREP (Preparation) (prepn. of, dry cationization process for)				
L71	ANSWER 36 OF 70 HCAPLUS COPYRIGHT 2003 ACS				
AN	1993:605768 HCAPLUS				
DN	119:205768				
TI	Industrial applications of potato starch				

products
 AU Kraak, A.
 CS AVEBE Res. Dev., Foxhol, 9607 PT, Neth.
 SO Industrial Crops and Products (1992), 1(2-4), 107-12
 CODEN: ICRDEW; ISSN: 0926-6690
 DT Journal; General Review
 LA English
 CC 44-0 (Industrial Carbohydrates)
 Section cross-reference(s): 17, 51, 61
 AB A review with 8 refs. on the 4 main areas for the industrial
applications of potato starch, i.e.,
adhesives, paper, food, and textiles, is presented. Also, there
 are a no. of other fields where **starch** products have a special
 role, including fluid loss control during deep-well drilling for petroleum
 and natural gas and **flocculation** in the purifn. process for
 drinking water.
 ST review **starch adhesive** food papermaking; textile
 processing aid **starch** review; **flocculation** well
 drilling **starch** review
 IT Drilling fluids and muds
 (fluid loss control agents for, **potato starch** for)
 IT Paper
 (manuf. of, **potato starch applications**
 in)
 IT **Adhesives**
 (potato starch applications in)
 IT Food
 (potato starch applications in industry
 of)
 IT Textiles
 (processing aids for, **potato starch** as)
 IT Water **purification**
 (flocculation, **potato starch**
 applications in)
 IT 9005-25-8, **Starch**, uses
 RL: USES (Uses)
 (potato, industrial **applications** of)

L71 ANSWER 37 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1993:430036 HCAPLUS

DN 119:30036

TI Manufacture of a dry **starch** ether thickener

IN Twardowski, Jerzy; Machowski, Stanislaw; Jakobczyk, Piotr; Adolf,
 Eugeniusz; Swierczynski, Wacław; Szczerbinski, Jerzy

PA Spółdzielnia Pracy Chemików "Xenon", Pol.

SO Pol., 2 pp.

CODEN: POXXA7

DT Patent

LA Polish

IC ICM C08B031-08

ICA C09D011-02

CC 42-5 (Coatings, Inks, and Related Products)

Section cross-reference(s): 38, 44, 46, 58

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	PL 154610	B1	19910830	PL 1987-269967	19871231
PRAI	PL 1987-269967		19871231		

AB A thickener for paints, inks, **adhesives**, laundry powders, and
 foam concrete is manufd. by **etherification of starch**
 for 2.5-3 h at 288-293K and 10-20 min at 358-373K using a soln. contg.
 polyols, 45-60% aliph. alcs., 12-15% alkali-metal hydroxides, and 0.5-5%
 surfactant in the presence of .ltoreq.14 parts alkali-metal.

chloroacetates/100 parts **starch**. Thus, 200 kg **potato starch** was mixed 2.5 h with 0.06 m³ soln. contg. 0.0092 m³ diethylene glycol, 0.0113 m³ aq. NaOH (d. 1489 kg/m³), 0.0395 m³ MeOH, 0.2 kg surfactant, 1.6 kg Na o-phenylphenoxide bactericide, and 20 kg Na chloroacetate at 290K, and the reaction mixt. was dried with 380-395K air and heated 15 min at 360K to give a light colored product with viscosity 15-20 Pa s.

ST ether **starch** thickener; **adhesive** thickener
starch ether; foam concrete thickener **starch** ether;
 laundry powder thickener **starch** ether; ink thickener
starch ether; paint thickener **starch** ether;
 etherification **starch** chloroacetate; methanol
 etherification **starch**; diethylene glycol
 etherification **starch**

IT **Etherification**
 (of **starch**)

IT Thickening agents
 (**starch** ethers, manuf. of)

IT **Adhesives**
 Detergents
 Inks

(thickeners for, dry **starch** ethers as)

IT Concrete
 (aerated, thickeners for, dry **starch** ethers as)

IT Coating materials
 (paints, thickeners for, dry **starch** ethers as)

IT 67-56-1, Methanol, uses 111-46-6, Diethylene glycol, uses 1310-73-2,
 Sodium hydroxide, uses 3926-62-3, Sodium chloroacetate
 RL: USES (Uses)

(in **etherification** of **starch** for thickeners)

IT **9005-25-8DP, Starch**, ethers
 RL: PREP (Preparation)
 (manuf. of dry, for thickeners)

L71 ANSWER 38 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1993:21261 HCAPLUS

DN 118:21261

TI **Location of amylose in normal starch granules. I. Susceptibility of amylose and amylopectin to cross-linking reagents**

AU Jane, J.; Xu, A.; Radosavljevic, M.; Seib, P. A.

CS Dep. Food Sci. Hum. Nutr., Iowa State Univ., Ames, IA, 50011, USA

SO Cereal Chemistry (1992), 69(4), 405-9

CODEN: CECHAF; ISSN: 0009-0352

DT Journal

LA English

CC 17-6 (Food and Feed Chemistry)

AB When granular **starch** was **crosslinked**, more **amylopectin** than **amylose** mols. were found

crosslinked. For example, when corn **starch** was treated with **crosslinking** reagent (0.07% epichlorohydrin) (pH 10.5 for 24 h), 91% of its **amylopectin** and 45% of its **amylose** became insol. **Crosslinking** of pregelatinized and dispersed **starch** caused less difference in the proportion of sol.

amylose and **amylopectin** than did the

crosslinking of native granular **starch**. After the

starch had been **crosslinked** in the granular form,

gel-permeation chromatograms showed no increase in the size of

amylose as a result of **crosslinking** between two or more

amylose mols. However, susceptibility of the **amylose** to

sequential hydrolysis by isoamylase and .beta.-amylase decreased. The

relative blue values of **amylopectin** peaks indicated that

amylose was **crosslinked** to **amylopectin**. This

was confirmed when the **amylopectin** isolated from **crosslinked starches** was debranched with isoamylase. These results are consistent with the view that **amylose** is interspersed among **amylopectin** mols. in corn and **potato starch** granules.

ST **starch amylose amylopectin crosslinking agent**
 IT 9005-25-8, **Starch**, biological studies
 RL: BIOL (Biological study)
 (amylose location in, of corn and potato, amylose and amylopectin crosslinking by epichlorohydrin and adipic anhydride in study of)
 IT 106-89-8, Epichlorohydrin, biological studies 2035-75-8, Adipic anhydride
 RL: BIOL (Biological study)
 (starch crosslinking by, amylose location in starch granule in relation to)

L71 ANSWER 39 OF 70 HCAPLUS COPYRIGHT 2003 ACS
 AN 1992:8164 HCAPLUS
 DN 116:8164
 TI **Adhesives** for the manufacture of **corrugated** boards, a dry mixture and combination of components
 IN Jansen, Johannes Jacobus; Potze, Hendrik Jans
 PA AVEBE B. A., Cooperatieve Verkoop- en Productievereniging van Aardappelmeel en Derivaten, Neth.
 SO Eur. Pat. Appl., 5 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 IC ICM C09J103-02
 CC 44-6 (Industrial Carbohydrates)
 Section cross-reference(s): 38, 43

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 450729	A2	19911009	EP 1991-200777	19910403
	EP 450729	A3	19920304		
	R: BE, CH, DE, ES, FR, GB, IT, LI, NL				
	NL 9000791	A	19911101	NL 1990-791	19900404
PRAI	NL 1990-791		19900404		

AB The title **adhesives** comprise water, suspended ungelatinized **starch** granules, a carrier which contains a gelatinized **crosslinked starch** and a gelatinized non-**crosslinked starch** product, and other customary additives. The **adhesives** have good rheol., water retention, processing and adhesion properties. A typical **adhesive** comprised water 275, pregelatinized **potato starch** 5, epichlorohydrin-**crosslinked** corn **starch** 5, Borax 3, NaOH 1, and native **potato starch** 84 parts.
 ST corrugated board **adhesive starch** carrier;
crosslinked starch carrier **adhesive**
 IT **Adhesives**
 (for corrugated boards, **starch**-based, contg. **crosslinked** carrier for improving processability and adhesion)
 IT Building materials
 (corrugated boards, **adhesives** for manufg., **starch**-based, contg. **crosslinked** carrier for good processability)
 IT 9005-25-8, **Starch**, miscellaneous
 RL: USES (Uses)
 (adhesives from, for corrugated boards, **crosslinked** and non-**crosslinked** carrier in prepn. of)
 IT 137878-56-9

RL: USES (Uses)
 (carrier, with non-**crosslinked** carrier, for **adhesives**
 in corrugated board manuf.)

L71 ANSWER 40 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1991:509395 HCAPLUS

DN 115:109395

TI Preparation of **crosslinked starch gel granules** for affinity **purification** of .alpha.-amylase

IN Somers, W. A. C.; Rozie, H. J.; Van't Riet, K.; Rombouts, F. M.; Visser, J.

PA Rijkslandbouwwuniversiteit Wageningen, Neth.

SO Neth. Appl., 30 pp.

CODEN: NAXXAN

DT Patent

LA Dutch

IC ICM B01J020-30

ICS B01D015-08; C12N009-26

CC 7-2 (Enzymes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	NL 8901576	A	19910116	NL 1989-1576	19890622
PRAI	NL 1989-1576		19890622		

AB An adsorbent for .alpha.-amylase is prepd. from **crosslinked starch** gel by grinding to a powder and/or enzymic activation with .alpha.-amylase, followed by granulation with a gelling agent (e.g. aq. alginate soln.) and a salt soln. (e.g. aq. Ca salt soln.). Thus, 25 g drum-dried **potato starch** powder was **crosslinked** by shaking with EtOH 153, distd. water 30.9, epichlorohydrin 12.6, and 5M NaOH 30.85 mL at 45.degree. for 4 h. The reaction was stopped with 200 mL 7% AcOH and the product was filtered, dried, and ground. A 0.5 wt./vol. soln. of Na alginate in distd. water was mixed with 5-30% of the **starch** powder and added dropwise to 0.5M CaCl₂ soln. to produce granules which were dried at 90.degree. for 24 h. Maxamyl (heat-stable .alpha.-amylase from Bacillus licheniformis) was purified 5-fold by adsorption on and desorption from these **starch** granules.

ST amylase affinity purifn **starch**

IT Adsorbents

(**crosslinked starch** gel granules, for affinity purifn. of .alpha.-amylase)

IT **Crosslinking**

(of **starch**, in **starch** gel granule prepn. for .alpha.-amylase purifn. by affinity absorption)

IT **9005-25-8, Starch**, uses and miscellaneous

RL: USES (Uses)

(**crosslinked** gel granules of, as adsorbent for .alpha.-amylase affinity purifn.)

IT 106-89-8, Epichlorohydrin, biological studies 7440-70-2, Calcium, biological studies 9005-32-7, Alginic acid 9005-38-3, Sodium alginate 10043-52-4, Calcium chloride, biological studies

RL: BIOL (Biological study)

(in **crosslinked starch** gel granules prepn., for .alpha.-amylase purifn. by affinity absorption)

IT 9000-90-2P, .alpha.-Amylase

RL: PUR (Purification or recovery); PREP (Preparation)
 (purifn. of, by affinity absorption on **crosslinked starch** gel granules)

L71. ANSWER 41 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1991:124848 HCAPLUS

DN 114:124848

TI Non-carrier **starch** as **adhesive** for **corrugated**
boards

IN Higashida, Koichi; Yasui, Toshikazu

PA Sanwa Denpun Kogyo K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C09J103-00

ICA B32B003-28

CC 44-6 (Industrial Carbohydrates)

Section cross-reference(s): 43

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 02281090	A2	19901116	JP 1989-103015	19890421
PRAI	JP 1989-103015		19890421		

AB The title **adhesives**, useful in high-speed operations, contain 3-9 parts high-viscosity **starch** (potato-based, etherified, esterified, **crosslinked**, or grafted) and 7-1 parts low-viscosity **starch** (corn-, wheat- or tapioca-based) mixed with H₂O to Ford cup viscosity (VF) 20-50 s. An **adhesive** with VF 38 s and good bonding strength was prepd. by dispersing 500 kg 7:3 mixt. of **potato starch** and **cornstarch** in 900 L water at 43.degree., adding slowly 642.5 kg 2.6% NaOH, and adding 5.85 kg H₃BO₃.

ST **starch adhesive** corrugated paperboard; corn **starch adhesive** paperboard; tapioca **starch adhesive** paperboard; **potato starch adhesive** paperboard; wheat **starch adhesive** paperboard

IT **Adhesives**

(**starches**, ungelatinized, for high-speed manuf. of corrugated paperboard)

IT Paperboard

(corrugated, **adhesives** for manuf. of, ungelatinized **starch** compns. as)

IT 9005-25-8, **Starch**, uses and miscellaneous

9005-25-8D, **Starch**, grafted

RL: USES (Uses)

(**adhesives**, ungelatinized, for high-speed manuf. of corrugated paperboard)

L71 ANSWER 42 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1991:84202 HCAPLUS

DN 114:84202

TI Method for manufacturing a modified **starch adhesive**

IN Mezynski, Leonard; Urbaniak, Grzegorz; Strozycka, Hanna

PA Centralne Laboratorium Przemyslu Ziemniaczanego, Pol.

SO Pol., 8 pp. Abstracted and indexed from the unexamined application

CODEN: POXXA7

DT Patent

LA Polish

IC ICM C09J003-06

ICS C08B031-06

CC 44-6 (Industrial Carbohydrates)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	PL 149441	B1	19900228	PL 1987-268185	19871012
PRAI	PL 1987-268185		19871012		

AB A modified **starch adhesive** is prepd. by **esterification** of **starch** in the presence of urea. **Starch** 100 wt. parts is wetted (to a moisture content of

.ltoreq.40%) by using an aq. soln contg. 85% H₃PO₄ 1.5-5.0, NaH₂PO₄ or KH₂PO₄ 2-7, and urea 6-12 wt. parts. The mixt. is dried to contain <20% H₂O, thermally treated at 120-150.degree. to obtain a product which is sol. in cold water, and mixed with alk. salts at an alk. salt/**starch** ester wt. ratio of 2-15:100. Thus, **potato** flour 500 kg was sprayed with 200 L soln. contg. urea 50 kg, NaH₂PO₄.H₂O 20 kg, and 85% H₃PO₄ 10 L. After drying with air at 165.degree., **starch** contg. 18% moisture was heated .apprx.1 h at 135.degree., cooled, and wetted with an aq. soln. contg. Na phenylphenolate and Na metasilicate to attain moisture content of 12%. The resulting product was dissolved in cold water to form a 10% **adhesive** paste having pH 7.8 and viscosity 1500 mPa-s.

ST **starch** ester **adhesive**; phosphorylation **starch** **adhesive**

IT Phosphorylation, synthetic
(of **starch** in presence of urea, for prepn. of **adhesive** pastes)

IT **Adhesives**
(pastes, modified **starch** compns. as, prepn. of)

IT 9005-25-8, **Starch**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(phosphorylation of, in presence of urea)

IT 127149-16-0P
RL: PREP (Preparation)
(prepn. of, as **adhesive** paste)

IT 1322-21-0, Sodium phenylphenolate 6834-92-0, Sodium metasilicate
RL: USES (Uses)
(water content controlled by, in modified **starch** **adhesive** pastes)

L71 ANSWER 43 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1990:461597 HCAPLUS

DN 113:61597

TI **Adhesive** compositions for **corrugated** board manufacture

IN Hishikawa, Yasutoshi; Inada, Kazuyuki; Norizuki, Ikuro

PA Matsutani Kagaku Kogyo Kaisha, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C09J103-08

CC 43-7 (Cellulose, Lignin, Paper, and Other Wood Products)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 02041384	A2	19900209	JP 1988-192460	19880801
	JP 06023355	B4	19940330		
PRAI	JP 1988-192460		19880801		

AB The title compns. forming **adhesive** solns. with water at room temp., suitable for high-speed corrugating machines, contain ungelatinized **starch** powder and **crosslinked** etherated .alpha.-**starch**. Thus, 100 kg **potato starch** was dispersed in Na₂SO₄.10H₂O in 120 L water, treated dropwise with a soln. of 1 kg NaOH in 25 L water), treated with 5 g propylene oxide and 5 g epichlorohydrin at 40-50.degree. for 20 h, neutralized with 0.4, H₂SO₄, washed, dewatered, slurried to a 40% **starch** content, gelatinized in a drum dryer, dried, and pulverized to give **crosslinked** hydroxypropyl .alpha.-**starch** having a degree of substitution 0.01 and swelling (2 g in 198 g water, 30 min) 70 mL. This product 3.5, tapioca **starch** powder 43.5, borax 1, and Na₂CO₃ 2 kg were mixed to give a compn. giving JIS Z 0402 **adhesive** strength 25.2 kg.

ST **starch** **adhesive** corrugated board

IT **Adhesives**

(**starch**, contg. **crosslinked** etherated
starch, for corrugated boards)

IT Paperboard
(corrugated, manuf. of, **adhesives** for)

IT 9005-25-8, **Starch**, uses and miscellaneous
RL: USES (Uses)
(**adhesives**, contg. **crosslinked** etherated
starch, for corrugated board manuf.)

IT 68412-87-3 72316-65-5, **Carboxymethylstarch** sodium
salt-epichlorohydrin copolymer 128465-87-2
RL: USES (Uses)
(**starch adhesives** contg., for corrugated board
manuf.)

L71 ANSWER 44 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN 1990:101063 HCAPLUS
DN 112:101063
TI Manufacture of modified **starch**
IN Mezynski, Leonard; Urbaniak, Grzegorz
PA Centralne Laboratorium Przemyslu Ziemniaczanego, Pol.
SO Pol., 8 pp. Abstracted and indexed from the unexamined application.
CODEN: POXXA7
DT Patent
LA Polish
IC ICM C08B030-00
CC 44-6 (Industrial Carbohydrates)
Section cross-reference(s): 40, 43
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	PL 144543	B1	19880630	PL 1985-254340	19850702
PRAI	PL 1985-254340		19850702		

AB **Starch** is impregnated (100 parts) with 1-10 parts alkali metal
or ammonium sulfate or hydrogen sulfate and 3-13 parts urea, and the mixt.
is held 0.5-2 h at 20-60.degree., dried to moisture content <20.degree.,
heated 0.5-2 h at 110-140.degree., cooled, and wetted with water. The
product is suitable for manuf. of fibers and paper. Thus, 100 kg
potato starch was mixed 1 h with 30 L soln. contg.
NaHSO4 3, urea 8, and MgSO4 1 kg at 20.degree., and the product was dried
to a moisture content of 18% at 60.degree., heated 2 h at pH 2 and
110.degree., cooled, and wetted to moisture content 14%. The product was
insol. in cold water. A 20% aq. **adhesive** soln. contg. this
product had a viscosity of 135 and 150 mPa-s before and after 5 h at
50.degree., resp.

ST **starch** modified prepn; fiber manuf modified **starch**;
paper manuf modified **starch**; sulfate modified **starch**;
urea modified **starch**; **adhesive** modified **starch**

IT Sizes
(for paper, modified **starch** as, prepn. of)

IT Paper
(manuf. of, modified **starch** for, prepn. of)

IT Synthetic fibers, polymeric
RL: IMF (Industrial manufacture); PREP (Preparation)
(manuf. of, modified **starch** solns. for)

IT **Adhesives**
(modified **starch** solns. as, prepn. of)

IT 9005-25-8DP, **Starch**, modified
RL: PREP (Preparation)
(prepn. of, for manuf. of fibers and paper)

IT 9005-25-8
RL: USES (Uses)
(sizes, for paper, modified **starch** as, prepn. of)

IT 57-13-6, Urea, uses and miscellaneous 7487-88-9, Magnesium sulfate, uses

and miscellaneous 7681-38-1, Sodium bisulfate 7757-82-6, Disodium sulfate, uses and miscellaneous

RL: USES (Uses)

(**starch modification** by, for manuf. of fibers and paper)

L71 ANSWER 45 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1990:101062 HCAPLUS

DN 112:101062

TI Preparation of **starch-based adhesive**

IN Mezynski, Leonard; Slawski, Michal

PA Centralne Laboratorium Przemyslu Ziemniaczanego, Pol.

SO Pol., 8 pp.

CODEN: POXXA7

DT Patent

LA Polish

IC ICM C09J003-06

ICS C08B031-18

CC 44-6 (Industrial Carbohydrates)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	PL 144862	B1	19880730	PL 1986-258558	19860321
PRAI	PL 1986-258558		19860321		
AB	An aq. starch suspension is oxidized by using NaClO (contg. 3-5.5% active Cl) at .ltoreq.35.degree. by decreasing pH from .apprx.11 to .apprx.4.5. The resulting 25% aq. oxidized starch soln. (viscosity 10-70 mPa-s at 75.degree.) is addnl. esterified, and the resulting depolymd. starch is dewatered, washed, and dried to the moisture content .ltoreq.20%. Then, 8-20% urea and(or) NaNO3 (anhyd. starch basis) is added, and the mixt. is homogenized. The product is suitable for bonding of fibers, and manuf. of sandpapers and adhesive tapes. Thus, 100 kg potato starch and NaClO (contg. 4.0 kg active Cl) were added to 120 L water, and the pH was decreased from 11.5 to 5 at 30.degree.. Then, esterification was done at pH 8-9.5 by using 4 L Ac2O and NaOH. Then, starch was dehydrated and dried to moisture content 18%. The resulting starch (viscosity 45 mPa-s at 75.degree.) was mixed with 10 kg NaNO3 and 5 kg urea and homogenized. The product was sol. in cold water and formed glossy coatings.				
ST	starch oxidized esterified adhesive ; urea modified starch adhesive ; sodium nitrate modified starch adhesive				
IT	Adhesive tapes (adhesives for, oxidized starch esters for)				
IT	Fibers Synthetic fibers Synthetic fibers, polymeric RL: USES (Uses) (binders for, esterified oxidized starch for)				
IT	Adhesives (esterified oxidized starch suspensions, contg. urea and sodium nitrate for)				
IT	Binding materials (esterified oxidized starch , for fibers)				
IT	Sandpaper (manuf. of, esterified oxidized starch for)				
IT	108-24-7, Acetic anhydride RL: RCT (Reactant); RACT (Reactant or reagent) (esterification by, of oxidized starch)				
IT	57-13-6, Urea, uses and miscellaneous 7631-99-4, Sodium nitrate, uses and miscellaneous RL: USES (Uses)				

(esterified oxidized **starch** esters contg., for
adhesives and binders)

IT 9005-25-8DP, **Starch**, oxidized, esterified
RL: IMF (Industrial manufacture); PREP (Preparation)
(manuf. of, for **adhesives** and binders)

L71 ANSWER 46 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1989:601330 HCAPLUS

DN 111:201330

TI Biocidal organic **flocculating** agent

IN Halamek, Bohumir; Kodet, Josef

PA Czech.

SO Czech., 6 pp.

CODEN: CZXXA9

DT Patent

LA Czech

IC ICM C02F001-50

CC 61-5 (Water)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CS 259109	B1	19881014	CS 1986-7306	19861010
PRAI	CS 1986-7306		19861010		
AB	Potato starch is suspended in an aq. soln. of CuCl ₂ (or CuSO ₄) and AgNO ₃ and the mixt. is evapd. on heated drums at 100-150.degree.. The agent replaces conventional flocculants in the clarification of drinking water and has algicidal and bactericidal properties. It is used at 5 mg/L-treated water, where the Cu and Ag concns. are adjusted so that the final concns. in the treated water do not exceed acceptable limits.				
ST	flocculant algicide bactericide water; potato starch flocculant water				
IT	Algicides Bactericides, Disinfectants, and Antiseptics (flocculants , for water)				
IT	Water purification (flocculation , agents for, algicidal-bactericidal, contg. potato starch and copper and silver)				
IT	7761-88-8, Silver nitrate, uses and miscellaneous RL: USES (Uses) (algicidal-bactericidal flocculant contg. potato starch and copper and, for water)				
IT	7447-39-4, Copper chloride, uses and miscellaneous 7758-98-7, Copper sulfate, uses and miscellaneous RL: USES (Uses) (algicidal-bactericidal flocculant contg. potato starch and silver and, for water)				
IT	9005-25-8, Starch , uses and miscellaneous RL: USES (Uses) (potato , algicidal-bactericidal flocculant contg. copper and silver and, for water)				

L71 ANSWER 47 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1989:480262 HCAPLUS

DN 111:80262

TI Dry carbohydrate **granules** or platelets for **adhesives**

IN Wegner, Juergen; Dierichs, Wolfgang; Haller, Werner; Jansen, Johannes
Jacobus; Capelle, Anthony; Kamminga, Willem; Guns, Jacobus

PA Henkel K.-G.a.A., Fed. Rep. Ger.; AVEBE B. A., Cooperatieve Verkoop- en Productievereniging van Aardappelmeel en Derivaten

SO Ger. Offen., 10 pp.

CODEN: GWXXBX

DT Patent

LA German
 IC ICM C08L003-08
 ICS C08L001-26; C08J003-12; C09J003-02
 ICA C09J003-04; C09J003-06; C09J003-14; B01J002-24; B01J002-26
 CC 44-8 (Industrial Carbohydrates)
 Section cross-reference(s): 43

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3734491	A1	19890420	DE 1987-3734491	19871012
	EP 311873	A2	19890419	EP 1988-116397	19881004
	EP 311873	A3	19900228		
	EP 311873	B1	19930818		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, LU, NL, SE				
	AT 93257	E	19930915	AT 1988-116397	19881004
	ES 2042681	T3	19931216	ES 1988-116397	19881004
	DD 283146	A5	19901003	DD 1988-320601	19881010
	AU 8823632	A1	19890413	AU 1988-23632	19881011
	AU 613410	B2	19910801		
	DK 8805669	A	19890413	DK 1988-5669	19881011
	FI 8804665	A	19890413	FI 1988-4665	19881011
	NO 8804524	A	19890413	NO 1988-4524	19881011
	ZA 8807578	A	19890628	ZA 1988-7578	19881011
	JP 01221473	A2	19890904	JP 1988-253960	19881011
	CA 1334547	A1	19950221	CA 1988-580124	19881012
	US 5087649	A	19920211	US 1990-625771	19901207

PRAI DE 1987-3734491 19871012
 EP 1988-116397 19881004
 US 1988-254508 19881006

AB The title compns., resistant to agglomeration, dust formation, and demixing, are prepd. by drying thin layers of 30-80% aq. mixts. of carboxymethylated or alkoxyated **starches** 30-95, cellulose ethers 3-40, and H2O-dispersible polymers 2-40% at 80-200.degree.. Adding 4.5 g epichlorohydrin to a slurry of 18 kg **potato starch** (19% H2O) and 25 kg H2O at pH 11, heating 16 h at 30.degree., adding 3:3 kg ClCH2CO2Na and 2.5 kg 50% NaOH, and heating for 30 s (outlet temp. 95.degree.) gave a **crosslinked** carboxymethyl **starch**. Adding 9.69 kg 50% poly(vinyl acetate) dispersion and 6.65 kg lightly ethoxylated Me cellulose, casting the slurry on a rotating drum heated at 120.degree. (residence time 15 s), and grinding the dry product gave a wallpaper **adhesive**.

ST **adhesive** dry carbohydrate deriv; wallpaper **adhesive** dry mix; carboxymethyl **starch** **adhesive** dry; cellulose ether **adhesive** dry; hydroxyethyl methyl cellulose **adhesive**; epichlorohydrin **crosslinker** CM **starch**

IT **Adhesives**
 (carboxymethyl **starch**-cellulose ether-water-sol. polymer blends, dry and water-dispersible)

IT 79-10-7D, Acrylic acid, esters, copolymers 9002-89-5 9003-20-7,
 Poly(vinyl acetate) 24937-78-8, EVA
 RL: USES (Uses)

(**adhesives**, contg. carboxymethyl **starch** and cellulose ethers, dry and water-dispersible)

IT 9004-32-4, Sodium carboxymethyl cellulose 9004-65-3,
 2-Hydroxypropylmethyl cellulose 9004-67-5, Methyl cellulose 9032-42-2,
 2-Hydroxyethylmethyl cellulose 9049-76-7, 2-Hydroxypropyl **starch**
 RL: USES (Uses)

(**adhesives**, contg. carboxymethyl **starch** and water-sol. polymers, dry and water-dispersible)

IT 9063-38-1, Sodium carboxymethyl **starch**
 RL: USES (Uses)

(**adhesives**, contg. cellulose ethers and water-sol. polymers, dry and water-dispersible)

IT 106-89-8, Epichlorohydrin, uses and miscellaneous
 RL: MOA (Modifier or additive use); USES (Uses)
 (crosslinking agents, for carboxymethyl starch)

IT 9005-25-8, Starch, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with epichlorohydrin and sodium chloroacetate)

IT 3926-62-3, Sodium chloroacetate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with starch and epichlorohydrin)

L71 ANSWER 48 OF 70 HCAPLUS COPYRIGHT 2003 ACS
 AN 1989:445047 HCAPLUS
 DN 111:45047
 TI Liquid body powder containing **potato starch** useful for
 delivering active ingredients, improving smoothness of skin, preventing
 irritation, and absorbing perspiration
 IN Fields, Garry D.
 PA USA
 SO PCT Int. Appl., 24 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM A61K007-035
 ICS A61K031-715; A61K047-00
 CC 62-4 (Essential Oils and Cosmetics)
 Section cross-reference(s): 63
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 8707139	A1	19871203	WO 1987-US1288	19870529
	W: AU, DK, JP, KR				
	RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
	AU 8775149	A1	19871222	AU 1987-75149	19870529
	EP 270632	A1	19880615	EP 1987-903964	19870529
	R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
	JP 01501147	T2	19890420	JP 1987-503555	19870529
PRAI	US 1986-868543		19860530		
	US 1986-916735		19861008		
	WO 1987-US1288		19870529		

AB The title liq. powder comprises **potato starch**, veegum,
 cetyl alc., stearic acid, glycerin, PEG-8 oleate, water, and, optionally,
 an active ingredient and/or a fragrance. A liq. powder compn. contained
 veegum 8, glycerin 8, stearic acid 4, cetyl alc. 7.2, PEG-8 oleate 3.2,
 fragrance 0.4, **potato starch** 203.6, and water to 800
 lb. To this compn. was added 8 lb Emercide 1199 or Wickenol 340 or
 Germeben II; all 3 bactericides were effective when tested. Germeben II
 gave the best results due to its high compatibility with the lotion and
 the fact it has a broad spectrum of preservative characteristics.

ST body powder liq pharmaceutical carrier; antiperspirant liq body powder;
 antiirritant liq body powder

IT Analgesics
 Anti-infective agents
 Antiemetics
 Antihistaminics
Antiperspirants
 Bactericides, Disinfectants, and Antiseptics
 Herb
 Inflammation inhibitors
 (carriers for, liq. body powder as)

IT Pharmaceutical dosage forms
 (carriers for, liq. body powder as, for topical and mucous membrane
 application)

IT Wound healing

(enhancement of, agents for, liq. body powders as carriers for)

IT Plant
(exts., liq. body powders as carriers for)

IT Smectite-group minerals
RL: BIOL (Biological study)
(liq. body powder contg., for cosmetic and pharmaceutical use)

IT **Pruritus**
(treatment of, agents for, liq. body powder as carriers for)

IT **Cosmetics**
(body powders, liq., starch and veegum in)

IT Fungicides and Fungistats
(medical, carriers for, liq. body powder as)

IT 61848-87-1, Wickenol 340 117803-48-2, Emercide 1199 121685-54-9,
Germeben II
RL: BIOL (Biological study)
(liq. body powder contg.)

IT 56-81-5, 1,2,3-Propanetriol, biological studies 57-11-4, Octadecanoic
acid, biological studies 9004-96-0 9005-25-8, Starch
, biological studies 36653-82-4, Cetyl alcohol
RL: BIOL (Biological study)
(liq. body powder contg., for cosmetic and pharmaceutical use)

L71 ANSWER 49 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1988:23616 HCAPLUS

DN 108:23616

TI Process for dry cationization of starch

IN Stober, Reinhard; Fischer, Wolfgang; Huss, Michael; Udluft, Klaus

PA Degussa A.-G., Fed. Rep. Ger.

SO Ger. Offen., 8 pp.

CODEN: GWXXBX

DT Patent

LA German

IC ICM C08B031-12

ICA C02F001-56; C01F011-46; D21H003-48

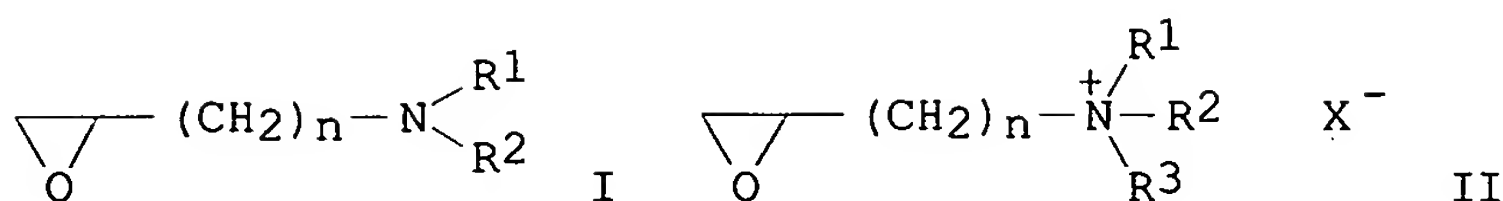
CC 44-6 (Industrial Carbohydrates)

Section cross-reference(s): 43, 61

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3604796	A1	19870820	DE 1986-3604796	19860215
	DE 3604796	C2	19871112		
	EP 233336	A2	19870826	EP 1986-116805	19861203
	EP 233336	A3	19880504		
	EP 233336	B1	19931103		
	R: AT, BE, DE, ES, FR, GB, IT, NL, SE				
	AT 96808	E	19931115	AT 1986-116805	19861203
	ES 2044833	T3	19940116	ES 1986-116805	19861203
	BR 8606473	A	19871020	BR 1986-6473	19861229
	US 4785087	A	19881115	US 1986-947458	19861229
	FI 8700250	A	19870816	FI 1987-250	19870121
	FI 82839	B	19910115		
	FI 82839	C	19910425		
	ZA 8700716	A	19870930	ZA 1987-716	19870130
	JP 62192401	A2	19870824	JP 1987-20615	19870202
	JP 05047562	B4	19930719		
	AU 8768793	A1	19870820	AU 1987-68793	19870213
	AU 593325	B2	19900208		
	CA 1292979	A1	19911210	CA 1987-529638	19870213
	US 4812257	A	19890314	US 1987-113970	19871029
	CN 1043505	A	19900704	CN 1988-108589	19881215
PRAI	DE 1986-3604796		19860215		
	EP 1986-116805		19861203		
	US 1986-947458		19861229		

GI



AB The dry **cationization** of **starch** is accomplished by reacting **starch** with I (R¹ = Cl-4 alkyl, Bz; R² = Cl-4 alkyl; n = 1-3) or II (R³ = Cl-4 alkyl; X = Cl, Br, AcO, sulfate) in alk. medium in the presence of H₂O at 5-40.degree. and in the presence of finely divided silicic acid. These **cationized starches** are useful as retention agents, for improving paper strength, as additives to pulp or to the sizing press, as thickeners, as **flocculation** agents in water treatment, and in the manuf. of gypsum. Thus, 50 g of **potato starch** (H₂O content 19.5%, insol. N content 0.008%), was added to a mixer, 6.44 kg Activator PC-2 [Ca(OH)₂ 66%, silicic acid 34%] was added, mixed for 5 min, over 5 min 5.137 kg of a reagent soln. contg. 1.054 kg II (R¹-R³ = Me, X = Cl, n = 1) was added, mixed for a further 10 min, then stored for 24 h at 20.degree., producing 92.8% yield of **cationic starch** ethers having substitution degree 0.026, and viscosity of a 3% **starch** paste 1480 mPa-s (Brookfield viscometer at 20.degree. and 100 rpm).

ST dry **cationization starch** process; **cationic starch** manuf paper size; water purifn **cationic starch** manuf; **flocculant cationic starch** water purifn; gypsum manuf **cationic starch**; thickening agent **cationic starch** manuf; retention agent **cationic starch** manuf; epoxypropyltrimethylammonium chloride reaction product **starch**

IT Water **purification**
(auxiliaries for, **cationic starch** ethers as, manuf. of)

IT **Flocculating agents**
Sizes
Thickening agents
(**cationic starch** ethers as, manuf. of)

IT Paper
(sizes for, **cationic starch** ethers as, manuf. of)

IT Amines, compounds
RL: USES (Uses)
(tertiary, epoxy, reaction products, with **starch**, **cationic starch** ether manuf. from)

IT Quaternary ammonium compounds, compounds
RL: USES (Uses)
(tri-Cl-4-alkyl(epoxyalkyl), reaction products, with **starch**, **cationic starch** ether manuf. from)

IT 3033-77-0DP, 2,3-Epoxypropyltrimethylammonium chloride, reaction products with **starch** 9005-25-8DP, **Starch**, reaction products with (epoxyalkyl) quaternary ammonium compds. and/or (epoxyalkyl) amines 112147-20-3DP, reaction products with **starch**
RL: IMF (Industrial manufacture); PREP (Preparation)
(manuf. of, as auxiliaries for paper and gypsum manuf., and water purifn.)

IT 1305-62-0, uses and miscellaneous 1343-98-2, Silicic acid
RL: USES (Uses)
(reaction of (epoxyalkyl) quaternary ammonium compds. and/or (epoxyalkyl) amines with **starch** in presence of)

IT 9005-25-8P
RL: PREP (Preparation)

(sizes, **cationic starch** ethers as, manuf. of)

L71 ANSWER 50 OF 70 HCAPLUS COPYRIGHT 2003 ACS
 AN 1987:600721 HCAPLUS
 DN 107:200721
 TI Some fundamental aspects on dual component retention aid systems
 AU Waagberg, Lars; Lindstroem, Tom
 CS STFI, Stockholm, Swed.
 SO Nordic Pulp & Paper Research Journal (1987), 2(2), 49-55
 CODEN: NPPJEG; ISSN: 0283-2631
 DT Journal
 LA English
 CC 43-7 (Cellulose, Lignin, Paper, and Other Wood Products)
 AB The **flocculation** characteristics of 3 different dual component retention aid systems, all based mainly on electrostatic interactions, were investigated. In all 3 systems, a very rapid **flocculation** process was obsd., irresp. of concns. of simple electrolyte and added polymer. The rate of **flocculation** was of the same order of magnitude as the calcd. collision frequency between polymers and fibers. Despite the high **flocculation** rate, the addn. of simple electrolytes caused a drastic decrease in degree of **flocculation** and av. diam. of formed flocks for the anionic polyacrylamide (A-PAM)-poly(diallyldimethylammonium chloride (Poly-DADMAC) system. This was attributed to a diffusion of the **cationic** polymer into the pores of the fiber wall. Since internal Poly-DADMAC adsorption decreased the no. of anchoring points for the high-mol.-wt. anionic polymer, it also decreased the degree of **flocculation** and the av. diam. of the formed flocs. Investigation of shear sensitivity for the A-PAM-diethylamine epichlorohydrin resin (PAE) suggested that floc disruption can be divided into 2 consecutive steps. When the shear level is increased from low levels of shear, the large flocs are 1st split into fragments and a smaller diam. of formed flocs is detected. However, when a certain diam. of the fragments (.apprx.2 mm) is reached, they no longer split into fragments but become totally disrupted into individual fibers. For the A-PAM-PAE system, the **cationic** polymer had to be preadsorbed on the cellulosic fibers to produce an efficient type of bridging **flocculation** when the A-PAM was added. When the order of addn. was reversed, a complex **flocculation** mechanism was responsible for the obsd. **flocculation** which is not nearly as extensive as the bridging type. The **cationic potato starch**-anionic silica sol system showed a much smaller floc size at comparatively the same **flocculation** index as the other systems. This was discussed in terms of a very efficient complex **flocculation** since this type of **flocculation** produced comparatively small flocs.

ST dual component retention aid paper; **flocculation** mechanism
 retention aid paper; polyacrylamide blend retention aid paper;
 dimethylamine epichlorohydrin resin retention paper;
 polydiallyldimethylammonium chloride blend retention paper; silica
starch blend retention paper

IT **Flocculation**
 (by dual-component retention aids in paper manuf., mechanism of)

IT Paper
 (manuf. of, retention aids for, dual-component; **flocculation**
 mechanism of)

IT 9005-25-8DP, **Starch, cationic**, uses and
 miscellaneous
 RL: PREP (Preparation); USES (Uses)
 (**potato**, retention aids contg., for paper manuf.,
flocculation mechanism of)

IT 9003-05-8D, Polyacrylamide, anionic 25988-97-0 26062-79-3,
 Poly(diallyldimethylammonium chloride)
 RL: USES (Uses)

- (retention aids contg., for paper manuf., **flocculation** mechanism of)
- IT 7631-86-9P, Silica, uses and miscellaneous
RL: PREP (Preparation); USES (Uses)
(sol, anionic, retention aids contg., for paper manuf., **flocculation** mechanism of)
- L71 ANSWER 51 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN 1987:596629 HCAPLUS
DN 107:196629
TI Influence of pH and **ionic strength** on the viscoelastic properties of **starch gels** - a comparison of **potato** and cassava **starches**
AU Muhrbeck, P.; Eliasson, A. C.
CS Dep. Food Technol., Univ. Lund, Lund, S-221 00, Swed.
SO Carbohydrate Polymers (1987), 7(4), 291-300
CODEN: CAPOD8; ISSN: 0144-8617
DT Journal
LA English
CC 17-2 (Food and Feed Chemistry)
AB The influence of pH and electrolytes on the viscoelastic properties of **potato** and cassava **starch** gels was investigated by using a cone-and-plate rheometer run in the oscillatory mode. The gel strength of the **potato starch** gels had a max. around pH 8.5, and was markedly lowered by the addn. of even small amts. of electrolytes. This may be due to an electrostatic interaction between **potato starch** phosphate groups and added **cations**, which blocks the normal phosphate-to-phosphate **crosslinking**. Neither pH nor electrolytes affected the viscoelastic properties of cassava **starch** gels. The gelatinization temp. and the gelatinization enthalpy of **potato starch**, as measured by differential scanning calorimetry, were insensitive to pH and to low electrolyte concns.
ST **starch** gel strength electrolyte; tapioca gel strength elasticity; **potato starch** gel strength elasticity
IT Electrolytes
(**starch** gel strength and viscoelasticity response to)
IT 9005-25-8, **Starch**, biological studies
RL: PRP (Properties)
(gel strength and viscoelasticity of, of **potato** and tapioca, electrolytes and pH in relation to)
IT 7447-40-7, Potassium chloride, biological studies 7647-14-5, Sodium chloride, biological studies 10043-52-4, Calcium chloride, biological studies 10108-64-2, Cadmium chloride 12125-02-9, Ammonium chloride, biological studies
RL: BIOL (Biological study)
(**starch** gel strength and viscoelasticity response to)
- L71 ANSWER 52 OF 70 HCAPLUS COPYRIGHT 2003 ACS
AN 1987:536232 HCAPLUS
DN 107:136232
TI **Physicochemical modification of starch** of various origin
AU Nebesny, Ewa; Sroczynski, Adam
CS Dep. Chem. Food Technol., Tech. Univ., Lodz, Pol.
SO Acta Alimentaria Polonica (1986), 12(2), 77-81
CODEN: AAPODK; ISSN: 0137-1495
DT Journal
LA English
CC 44-6 (Industrial Carbohydrates)
AB **Potato**, wheat, and corn **starches** were **crosslinked** with urea and etherified with ClCH₂CH(OH)CH₂N+Me₃Cl⁻. The viscosities of the **crosslinked** wheat and corn

starches were several times greater than that of **crosslinked potato starch**. The hydroxypropylammonium **starches** displayed similar viscosity relations. The wheat- and corn-derived hydroxylammonium **starches** had only half the degree of substitution of the **potato starch** and showed less **cation** activity and water soly.

- ST **starch urea crosslinking** viscosity;
hydroxypropylammonium **starch** prepn property; **potato starch modification**; wheat **starch modification**; corn **starch modification**
- IT **Crosslinking**
(of **starch** by urea, viscosity in relation to)
- IT 9005-25-8, **Starch**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(**etherification** of, with chlorohydroxypropyltrimethylammonium chloride)
- IT 56780-58-6
RL: PRP (Properties)
(physicochem. properties of, **starch** source effect on)
- IT 3327-22-8, 3-Chloro-2-hydroxypropyltrimethylammonium chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with **starch**)
- IT 110413-48-4
RL: PRP (Properties)
(viscosity of, **starch** source effect on)

L71 ANSWER 53 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1985:407936 HCAPLUS

DN 103:7936

TI Paper backing for producing **adhesive** paper

IN Puiu, Mihai; Dediu, Vladimir; Sfrijan, Vasile; Turcheviri, Rodica

PA Intreprinderea de Hirtie, Busteni, Rom.

SO Rom., 5 pp.

CODEN: RUXXA3

DT Patent

LA Romanian

IC D21H001-38

CC 43-7 (Cellulose, Lignin, Paper, and Other Wood Products)

Section cross-reference(s): 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	RO 83689	B	19840315	RO 1981-106223	19811231
PRAI	RO 1981-106223		19811231		

- AB Paper supports with good physicochem. properties for release paper for manuf. of leather substitutes are prepd. from 60:40 semibleached softwood pulp-bleached hardwood sulfate pulp slurries contg. **potato starch** and its **cationic** ether deriv. and are sized with oxidized **potato starch**. Thus, a slurry with 3.5-4% consistency from a 60:40 semibleached softwood pulp-bleached hardwood pulp mixt. contg. 2.5% (based on dry pulp) **potato starch** was mixed with 0.2% (based on dry pulp) **cationic** ether deriv. of **potato starch** (as a 2% aq. soln.) and fabricated into paper, which was sized with a 4% aq. oxidized **starch** soln. to give a paper support with basis wt. .apprx.132-142 g/m², longitudinal and transversal tensile strengths .gtoreq.15 and .gtoreq.7 dN, resp., bursting strength .gtoreq.4 dN/cm², abs. tear strength .gtoreq.140 g cm/cm (av. of both directions), evenness .gtoreq.15 s (STAS 4760/66), water absorptivity .ltoreq.170 g/m², longitudinal and transversal surface-pull-out resistance .gtoreq.13 and .gtoreq.11, resp., (STAS 92/59/72), and water content 5-7%.
- ST release paper leather substitute manuf; oxidized **starch** size paper; **cationic starch** ether contg paper
- IT Leather substitutes

(manuf. of, release paper for)

IT Sizes
(oxidized **starch**, for release paper for manuf. of leather substitutes)

IT Pulp, cellulose
(**starch-** and **cationic starch** ether-contg., for release paper for manuf. of leather substitutes)

IT Parting materials
(release papers, **starch-** and **cationic starch** ether-contg., oxidized **starch**-sized)

IT 9005-25-8, uses and miscellaneous 9005-25-8D, **cationic** ether derivs.
RL: USES (Uses)
(paper contg., for release sheets for manuf. of leather substitutes)

L71 ANSWER 54 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1985:222442 HCAPLUS

DN 102:222442

TI **Potato** hydrolysis material

PA AVEBE B. A., Cooperatieve Verkoop- en Productievereniging van Aardappelmeel en Derivaten, Neth.

SO Neth. Appl., 8 pp.

CODEN: NAXXAN

DT Patent

LA Dutch

IC ICM C08B030-12

CC 44-6 (Industrial Carbohydrates)

Section cross-reference(s): 7

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	NL 8302229	A	19850116	NL 1983-2229	19830622
PRAI	NL 1983-2229		19830622		

AB **Potatoes** or **potato** wastes are ground, and simultaneously treated with .alpha.-amylase [9000-90-2] and steam to liquefy the **starch** to a dextrose equiv. (DE) of 5-30 and **coagulate** the protein. Thus, **potatoes** are ground with addn. of 500 ppm NaHSO₃, heated to 110.degree. by steam injection for .apprx.1 min, adjusted to pH 5.9 at 80.degree., and treated with 0.10% Thermamyl to a DE of 25. The fiber and protein is removed and the remaining soln. is cooled to 60.degree., adjusted to pH 4.5 and further treated with 0.25% glucoamylase [9032-08-0] for 24 h to a DE of 90. Solids formed during **saccharification** are removed and the hydrolysis product is dried to 60% solids before further processing.

ST **potato** hydrolysis amylase; glucoamylase **potato** hydrolysis

IT **Potato**
(hydrolysis of, with amylase-glucoamylase)

IT 9032-08-0

RL: USES (Uses)

(hydrolysis with amylase and, of **potato**)

IT 9000-90-2

RL: USES (Uses)

(hydrolysis with glucoamylase and, of **potato**)

IT 9005-25-8, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(**potato**, hydrolysis of, with amylase-glucoamylase)

L71 ANSWER 55 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1985:202901 HCAPLUS

DN 102:202901

TI **Starch** type additives

PA Ajinomoto Co., Inc., Japan

SO Jpn. Tokkyo Koho, 2 pp.
 CODEN: JAXXAD
 DT Patent
 LA Japanese
 IC A23L001-10
 CC 17-6 (Food and Feed Chemistry)
 Section cross-reference(s): 63

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 59053015	B4	19841222	JP 1977-110824	19770914
	JP 54044057	A2	19790407		
PRAI	JP 1977-110824		19770914		
AB	Starch type additives are prepd. by pulverizing dextrin [9004-53-9] film of DE 2-10 (2-10 dextrose equiv.). The pulverized DE 2-10 dextrin prepn. are useful as bulking agents for flavor enhancers and foods and pharmaceuticals. Thus, 500 g sweet potato starch [9005-25-8] was suspended in 2 L pH 6.8 NaOH and hydrolyzed with a com. saccharification enzyme to form DE 5 dextrin prepn. The DE 5 dextrin prepn. was purified with celite and activated C, dried under vacuum to form DE 5 dextrin film which was subsequently pulverized to 25-50 mesh dextrin granules. The DE 5 dextrin granules were transparent, colorless, and odorless, and when used as a bulking agent for Na glutamate [142-47-2] did not change the taste or luster of the Na glutamate prepn.				
ST	dextrin bulking agent food pharmaceutical; sodium glutamate bulking agent dextrin; flavor enhancer bulking agent dextrin				
IT	Food Pharmaceuticals (dextrin bulking agent for)				
IT	Condiments (flavor-enhancing, dextrin bulking agent for)				
IT	142-47-2 RL: BIOL (Biological study) (dextrin bulking agent for)				
IT	9005-25-8, biological studies RL: RCT (Reactant); RACT (Reactant or reagent) (hydrolysis of, in bulking agent manuf. for food and pharmaceuticals)				
IT	9004-53-9P RL: PREP (Preparation) (prepn. of, as bulking agent for food and pharmaceuticals)				

L71 ANSWER 56 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1982:443692 HCAPLUS

DN 97:43692

TI **Starch** derivatives in water treatment

AU Manguin, Henri; Ansart, Michel

CS Etabl. Paul Doittau, Fr.

SO Eau et l'Industrie (1981), 53, 90-4

CODEN: EINS DK; ISSN: 0337-9329

DT Journal

LA French

CC 60-2 (Waste Treatment and Disposal)

Section cross-reference(s): 43, 44, 54, 61

AB **Potato starch**-derived **flocculants**, e.g., **starch** phosphates, used in the treatment of potable waters and industrial wastewaters, e.g., paper processing effluents, exhibited high macromolecularity, cold-water soly., and marked anionic properties.

ST **potato starch** wastewater **flocculation**;
 potable water **flocculation starch** deriv

IT Ore treatment
 (sludge from, **flocculation** of, by **potato starch** derivs.)

IT Paper
 (wastewater from processing of, **flocculation** of, by
potato starch derivs.)

IT Wastewater treatment
 (**flocculation**, by **potato starch** derivs.)

IT Water purification
 (**flocculation**, of potable waters, by **potato
 starch** derivs.)

IT 9005-25-8D, derivs.
 RL: PROC (Process)
 (**flocculants**, potable water and wastewater treatment by)

IT 9005-25-8, uses and miscellaneous
 RL: USES (Uses)
 (**potato, flocculants**, in potable water and
 wastewater treatment)

IT 57-50-1P, preparation
 RL: PREP (Preparation)
 (wastewater from processing of, **flocculation** of, by
potato starch derivs.)

L71 ANSWER 57 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1981:123496 HCAPLUS

DN 94:123496

TI **Corrugated paperboard adhesives** for use in
 high-speed **corrugators**

PA Hohnen Oil Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC C09J003-06; B32B029-00

CC 44-5 (Industrial Carbohydrates)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 55139474	A2	19801031	JP 1979-46151	19790416
	JP 57030869	B4	19820701		
PRAI	JP 1979-46151		19790416		
AB	Epichlorohydrin (I) [106-89-8]- or HCHO [50-00-0]- crosslinked starch [9005-25-8] with gel strength 1.5-4 kg is used in adhesives . Thus, 840 L water (60.degree.) contg. HS-800 (starch) 104, borax 2, and NaOH 9.4 kg is mixed with 1260 L water (35.degree.) contg. 446 kg I- crosslinked potato starch and 9.9 kg borax, stirred 30 min, and used to prep. paperboard with adhesion 23.1 kg at 250 m/min, compared with 22.9 kg at 200 m/min for an adhesive contg. uncrosslinked corn starch .				
ST	epichlorohydrin crosslinking starch adhesive ; formaldehyde crosslinking starch adhesive ; paperboard adhesive starch crosslinked				
IT	Crosslinking agents (epichlorohydrin and formaldehyde, for starch adhesives)				
IT	Adhesives (starch, crosslinking agents for)				
IT	9005-25-8, uses and miscellaneous RL: USES (Uses) (adhesives, crosslinking agents for)				
IT	50-00-0, uses and miscellaneous 106-89-8, uses and miscellaneous RL: MOA (Modifier or additive use); USES (Uses) (crosslinking agent, for starch adhesives)				

L71 ANSWER 58 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1981:105259 HCAPLUS

DN 94:105259

TI **Starch** preparation with an electropositive charge

IN Mezynski, Leonard; Urbaniak, Grzegorz

PA Centralne Laboratorium Przemyslu Ziemniaczanego, Pol.

SO Pol., 3 pp.

CODEN: POXXA7

DT Patent

LA Polish

IC C08B031-08

CC 44-5 (Industrial Carbohydrates)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	PL 107566	P	19800229	PL 1976-192728	19760928
PRAI	PL 1976-192728		19760928		

AB **Cationic starch** [9005-25-8] derivs. with improved soly. and dispersibility in cold water and improved **flocculating** properties and retention capacity in the manuf. of paper are prep'd. by **etherification** of **starch** with tri- or tetraalkylammonium compds., neutralization, treatment with Na₂SO₄ 3-7, Na₂CO₃ 3-6, Al₂(SO₄)₃ 0.5-2, and Na₂B₄O₇ 0.2-0.4 part/100 parts **starch**, and drying in roll dryer at 130-50.degree... Thus, to 1000 part **potato starch** in 1100 parts water contg. 44 parts Na₂SO₄ was added at 25.degree. 3% NaOH 250, Et₂NCH₂CH₂Cl.HCl [869-24-9] 20, and again 3% NaOH 250 parts. After 10 h the substitution degree was 0.015, and the mixt. was neutralized with H₂SO₄, treated with Na₂CO₃ 40, Al₂(SO₄)₃ 8.2, and Na₂B₄O₇ 3 parts, and dried at 145.degree./5 atm.

ST **starch** ammonioalkyl ether; **flocculant cationic**

IT **Flocculating** agents

(**cationic starch**, manuf. of)

IT Paper

(manuf. of, retention agents for, **cationic starch** manuf. for)

IT **Etherification**

(of **starch**, with aminoalkyl chlorides)

IT 9005-25-8, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(**etherification** of, with aminoalkyl chlorides)

IT 497-19-8, uses and miscellaneous 1330-43-4 7757-82-6, uses and miscellaneous 10043-01-3

RL: USES (Uses)

(in **cationic starch** manuf.)

IT 9041-94-5P 56780-58-6P

RL: IMF (Industrial manufacture); PREP (Preparation)

(manuf. of, process for)

IT 869-24-9 3327-22-8

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, with **starch**)

L71 ANSWER 59 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1980:99446 HCAPLUS

DN 92:99446

TI Cosmetic bases

IN Yanagawa, Takuma; Kawada, Yasuyuki; Saika, Daini

PA Lion Fat and Oil Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC A61K007-00

CC 62-4 (Essential Oils and Cosmetics)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 54086629	A2	19790710	JP 1977-153417	19771220
	JP 60042761	B4	19850925		
PRAI	JP 1977-153417		19771220		

AB A toilet article base which consists of a denatured **starch cation** with a quaternary N content of 1-5 wt.%, obtained by reaction of a glyceryltrimethylammonium salt or 3-halo-2-hydroxypropyltrialkylammonium salt with **starch**, is prepd. Thus, **potato starch** (50 g) in 50% aq. Me₂CHOH (150 g) was treated with aq. NaOH (9.9 g), dissolved, and the resulting soln. was treated with aq. glyceryltrimethylammonium chloride (<5 mol), heated 3 h at 50.degree., concd. HCl (4.2 g) added, the soln. dild. with aq. Me₂CHOH (150 g), and after 1 h at room temp. the ppt. was recrystd. from MeOH 3 times and dried to give a **starch cation** contg. 2.63 wt.% of the quaternary N compd. A typical compn. contained Mg lauryl sulfate 10 or Na lauryl sulfate 10, lauric acid triethanolamine salt 5, coconut oil fatty acid diethanolamine salt 5, denatured **starch cation** 1, edetate sodium 0.1 wt.% and perfume, dye, preservative, and water to total 100 wt.%.

ST toilet article base; **starch** quaternary cosmetic baseIT **Cosmetics**

(bases for, denatured **cationic starch** contg. quaternary ammonium salts for)

IT Quaternary ammonium compounds, compounds

RL: BIOL (Biological study)

(reaction products with **starch**, cosmetic bases contg.)

IT **9005-25-8D**, reaction products with quaternary ammonium salts
34004-36-9D, reaction products with **starch**

RL: BIOL (Biological study)

(cosmetic bases contg.)

L71 ANSWER 60 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN **1979:56715** HCAPLUSDN **90:56715**TI High-viscosity **cationic starches**

IN Takeda, Hisao; Kawano, Mutsumi

PA Kyoritsu Yuki Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC C08B031-12

CC 44-5 (Industrial Carbohydrates)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 53123486	A2	19781027	JP 1977-37533	19770404
	JP 60011723	B4	19850327		
PRAI	JP 1977-37533		19770404		

AB **Starches** were treated with Me₃N or Et₃N and epichlorohydrin (I) at I-amine molar ratio 1:1.5-2 to prep. biodegradable **cationic starches** which were **flocculating** agents for the used as residual mud during the treatment of human waste. Thus, 20 parts **potato starch** was stirred in 180 parts water at 70.degree., cooled to 50.degree., mixed with 36.3 parts 30% aq. Me₃N and 11.4 parts I, and allowed to react for 4 h to prep. **cationic starch**.

ST **cationic starch flocculating agent**;
wastewater treatment **cationic starch**

IT Wastewater treatment

(**flocculation**, agents for, epichlorohydrin-trimethylamine-
starch reaction products as)

IT 75-50-3D, reaction products with epichlorohydrin and **starch**
106-89-8D, reaction products with **starch** and triethylamine
121-44-8D, reaction products with epichlorohydrin and **starch**
9005-25-8D, reaction products with epichlorohydrin and
triethylamine

RL: USES (Uses)

(**flocculating** agents)

L71 ANSWER 61 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1979:40519 HCAPLUS

DN 90:40519

TI **Cationic starches**

IN Takeda, Hisao; Kawano, Mutsumi

PA Kyoritsu Yuki Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC C08B031-00

CC 44-5 (Industrial Carbohydrates)

Section cross-reference(s): 60

FAN.CNT.1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 53121886	A2	19781024	JP 1977-36098	19770401
	JP 60011722	B4	19850327		
PRAI	JP 1977-36098		19770401		

AB **Starch** was carbamoylethylated and treated with HCHO and Me₂NH or Et₂NH to prep. **flocculants** for sewage disposal. Thus, 16.2 parts **potato starch** was dissolved in 162 parts water at 70.degree., cooled to 40.degree., mixed with 0.5 part NaOH and 7.1 parts acrylamide, heated at 55.degree. for 18 h mixed with 8.1 parts 37% aq. HCHO and 10.8 parts 50% aq. Me₂NH, and heated at 40.degree. for 4 h to prep. **cationic starch**.

ST **starch flocculant** sewage disposal; **cationic starch flocculant**; Mannich reaction carbamoylethylated **starch**

IT Wastewater treatment
(**flocculating** agents for, **cationic starch** as)

IT Mannich reaction
(of carbamoylethylated **starch**)

IT 50-00-0D, reaction products with carbamoylethylated **starch** and dimethylamine 109-89-7D, reaction products with carbamoylethylated **starch** and formaldehyde 124-40-3D, reaction products with carbamoylethylated **starch** and formaldehyde **9005-25-8D**, carbamoylethylated, reaction products with dialkylamines and formaldehyde
RL: USES (Uses)

(**flocculants**, for wastewater treatment)

L71 ANSWER 62 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1978:63491 HCAPLUS

DN 88:63491

TI Studies on **cationic** polymers. II. Preparation and **flocculation** effect of **cationic starch**

AU Nishiuchi, Toyomichi; Nishiuchi, Natzu; Kobayashi, Kumiko

CS Fac. Educ., Kochi Univ., Kochi, Japan

SO Nippon Kagaku Kaishi (1977), (11), 1711-16

CODEN: NKAKB8; ISSN: 0369-4577

DT Journal

LA Japanese

- CC 44-5 (Industrial Carbohydrates)
Section cross-reference(s): 60, 61
- AB Reaction of corn- or **potato starch** [9005-25-8]
] successively with epichlorohydrin [106-89-8] and triethylamine
[121-44-8] gave a **cationic** deriv. which acted as a
flocculating agent for kaolin suspensions. A degree of
etherification of .apprx.0.4 was obtained by treating 1 gm
potato starch with 10 mL epichlorohydrin in 10 mL 0.2%
H2SO4 at 45.degree. for 24 h; the degree of **etherification** was
increased and the yield decreased by repeating the reaction. When a 2%
aq. soln. contg. 1 g of the etherified **starch** (
etherification degree 0.6) was treated with 1-6 mL Et3N at
60.degree. for 1 h, 42-50% of the Cl substituent was converted into
triethylammonium chloride groups. A kaolin suspension was satisfactorily
clarified when 0.1% (based on kaolin) of the **cationic**
starch was added.
- ST **cationic starch flocculating agent**;
epichlorohydrin **etherification starch**; amine
substitution chloroalkyl **starch**
- IT **Flocculating agents**
(**cationic starch** derivs., for kaolin suspensions)
- IT Kaolin, uses and miscellaneous
RL: USES (Uses)
(**flocculation** of suspensions of, by **cationic**
starch derivs.)
- IT **Etherification**
(of **starch**, with epichlorohydrin)
- IT Quaternization
(of triethylamine, with chlorohydroxypropyl **starch**)
- IT Quaternary ammonium compounds, uses and miscellaneous
(**starch** derivs., **flocculating** agents, for kaolin
suspensions, prepn. of)
- IT **9005-25-8D, cationic** deriv.
RL: USES (Uses)
(**flocculating** agents, for kaolin suspensions, prepn. of)
- IT 121-44-8, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with chlorohydroxypropyl **starch**)
- IT **9005-25-8**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with epichlorohydrin)
- IT 106-89-8, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with **starch**)
- IT 65324-73-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with triethylamine)
- L71 ANSWER 63 OF 70 HCAPLUS COPYRIGHT 2003 ACS
- AN 1974:436637 HCAPLUS
- DN 81:36637
- TI Hydration and **gelation** of modified **potato**
starches
- AU Chilton, W. G.; Collison, R.
- CS Dep. Catering Stud., Huddersfield Polytech., Queensgate/Huddersfield, UK
- SO Journal of Food Technology (1974), 9(1), 87-93
CODEN: JFOTAP; ISSN: 0022-1163
- DT Journal
- LA English
- CC 17-4 (Foods)
Section cross-reference(s): 44
- AB The **gelation** characteristics of natural **potato starch**
and 2 modified **starches** were compared with their water sorption

isotherms detd. at 25.degree.. The pregelatinized **starch** gels more readily than the natural **starch**, but has a lower water sorption capacity at <90% relative humidity. The **cross-linked starch** gels less readily than the normal **starch** on heating but has a similar water sorption isotherm.

ST **starch modification** gelation; water sorption **starch**

IT Sorption
(of water, by **starch**, **cross-linking** and pregelatinization in relation to)

IT 9005-25-8, properties

RL: PRP (Properties)

(gelation and hydration of, of **potato**, **cross-linking** and pregelatinization in relation to)

IT 7732-18-5

RL: PEP (Physical, engineering or chemical process); PROC (Process)
(sorption of, by **starch**, **cross-linking** and pregelatinization in relation to)

L71 ANSWER 64 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1974:100171 HCAPLUS

DN 80:100171

TI **Potato starch** in tablet production

AU Kala, H.; Huenerbein, B.; Chwojka, E.; Moldenhauer, H.

CS Sekt. Pharm, Martin-Luther-Univ. Halle-Wittenberg, Halle/Saale, Ger. Dem. Rep.

SO Pharmazie (1973), 28(11-12), 785-9

CODEN: PHARAT; ISSN: 0031-7144

DT Journal

LA German

CC 63-6 (Pharmaceuticals)

AB Eight batches of **potato starch** were studied for compliance with the requirements of the DAB 7, DDR and the **specifications** of the appropriate TGL (3069). Variations in anal. values were small and the quality of the compressed products was not influenced by these differences. Studies included H2O content (12-20%), N content, ash content (0.1-0.34%), SO2 content (0.72-2.72%), degree of acidity, pH (5.6-6.0); **starch** granule size and size distribution (5-75 .mu. mostly 10-30 .mu., over 40 .mu. very variable %), and degree of decompn. The mech. properties of the tablets are dependent on the drying intensity of the granulation process; but the H2O content of the **starch** has no recognizable influence. Uniform drying at a raised temp. (35.degree.) was preferable to drying at room temp. (21.degree.). When **starch** was dried at 40.degree. (as recommended for **starch** use as a disintegrating agent), a rapid loss of H2O occurred for the first 5 hr, followed by no further loss (to 24 hr). **Starch** dried at 110.degree. retained 0.2-0.3% H2O. When this was stored 48 hr in hygrostats with 30, 50, and 70% relative humidity, the H2O content was 5.7-6.0, 8.4-8.7, and 11.5-12.2%, resp. From a study of the compressed tablet characteristics, no differences could be found between those made with untreated **starch** and those with hot-air-pretreated **starch**.

ST **starch** tablet disintegrant

IT Tablets

(disintegrant for, **starch** as)

IT 9005-25-8, biological studies

RL: BIOL (Biological study)

(tablet disintegrant)

L71 ANSWER 65 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1973:17995 HCAPLUS

DN 78:17995

TI **Starch products** in glueing of wood materials by

synthetic resin **adhesives**

- AU Plath, Lore
 CS Gernsbach, Fed. Rep. Ger.
 SO Staerke (1972), 24(9), 306-12
 CODEN: STRKA6; ISSN: 0038-9056
 DT Journal
 LA German
 CC 44-5 (Industrial Carbohydrates)
 Section cross-reference(s): 37
- AB In the wood processing industry, considerable amts. of **starch** [9005-25-8] products (A) were used as extender for the glueing with aminoplasts (urea and melamine resin) **adhesives**. A had rheol., **crosslinkage**-regulating, and stress-balancing actions. The upper limit of the amt. of A according to glueing quality stds. was detd. by investigation of statistically evaluated plywood glueings. The behavior of A in the glueline was exam. by microscopic investigations of stained microtome sections from glued objects.
- ST **starch** extender glueing wood; urea resin **adhesive** wood; melamine resin **adhesive** wood; aminoplast **adhesive** wood
- IT Aminoplasts
 RL: USES (Uses)
 (adhesives, contg. **starch**, for plywood)
- IT Corn flour
 Rice flour
 Rye flour
 Wheat flour
 (adhesives, contg. urea resins, for plywood)
- IT **Potato**
 (flour, **adhesives**, contg. urea resins, for plywood)
- IT **Adhesives**
 (urea resins contg. **starch**, for plywood)
- IT 9003-20-7
 RL: USES (Uses)
 (adhesives, contg. **starch**, for plywood)
- IT 9005-25-8, uses and miscellaneous
 RL: USES (Uses)
 (adhesives, contg. urea resins, for plywood)
- L71 ANSWER 66 OF 70 HCAPLUS COPYRIGHT 2003 ACS
 AN 1969:514436 HCAPLUS
 DN 71:114436
 TI **Modification** of **starch** with pullulanase to increase its **adhesive** power
 PA Scholten Research N. V.
 SO Fr., 3 pp.
 CODEN: FRXXAK
 DT Patent
 LA French
 IC C13L
 CC 44 (Industrial Carbohydrates)
 FAN.CNT 1
- | | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|------------|------|----------|-----------------|----------|
| PI | FR 1559081 | | 19690307 | FR | 19680119 |
- AB **Starch** is incubated with the enzyme pullulanase (prepd. from Aerobacter aerogenes as described in Ger. 1,193,914). The modified **starch** has a greater tendency toward retrogradation than **starch** modified by other methods, has a higher affinity (5.6% compared with 4.1%) for I than does the unmodified **starch**, and has good **adhesive** properties. Thus, 75 parts **potato starch** in 1000 parts citrate buffer (0.005 mole concn., pH 5) was dispersed by cooking the suspension for 15 min. The compn. was cooled to

30.degree. and incubated with 9 units pullulanase for 5 hrs. The viscosity of the dispersion was 1062, 216, 150, and 102 cp. after 0, 1, 2, and 5 hrs., resp. The enzyme was then **coagulated** by cooking and the **starch** was dried.

ST **starch modification** pullulanase; pullulanase
starch modification; potato starch
modification; adhesives starch

IT Aerobacter

IT **Adhesives**, preparation
(starch modified with pullulanase)

IT **9005-25-8**, properties
RL: PRP (Properties)
(**adhesiveness** of pullulanase-modified)

IT 9012-47-9, Glucosidases, **amylopectin** 1,6-
(from Aerobacter aerogenes, **starch** modified with,
adhesiveness of)

L71 ANSWER 67 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN **1969:433300** HCAPLUS

DN **71:33300**

TI **Potato starch** as a sludge conditioner

AU Vogh, Richard P.; Warrington, James E.; Black, Alvin Percy

CS USA

SO Journal - American Water Works Association (1969), 61(6), 276-84

CODEN: JAWWA5; ISSN: 0003-150X

DT Journal

LA English

CC 61 (Water)

AB New water softening plants in Florida have experienced serious torque problems, in the sludge rake mechanisms, from resistant sludge. After a relatively short period of using lime softening which activated silica as the **flocculant**, the torque caused by the sludge would become so high as to render the reactor inoperable. A form of **potato starch** which swells in cold water was found to condition the sludge properly at very moderate cost with little extra work, and a new torque tester evolved from the research. The action of **potato starch** as **flocculant** in water softening is discussed.

ST **potato starch flocculants** water;
starch potato flocculants water;
flocculants water **potato starch**

IT Water **purification**
(softening, conditioning of sludge from, by **starch**)

IT **9005-25-8**, uses and miscellaneous

RL: USES (Uses)

(as water-softening-sludge conditioner)

L71 ANSWER 68 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN **1965:499395** HCAPLUS

DN **63:99395**

OREF 63:18367b-c

TI Water-soluble polymers

IN Takahashi, Takeshi; Okamoto, Yoshio

PA Daiichi Kogyo Seiyaku Co., Ltd.

SO 2 pp.

DT Patent

LA Unavailable

CC 48 (Plastics Technology)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 40016150		19650726	JP	19611120
AB	Reaction of polysaccharides, their etherified derivs., or poly(vinyl alc.) with dicarboxylic anhydrides and subsequent neutralization of the				

resulting monoesters yielded polymers with a higher H₂O soly. Thus, heating an agitated mixt. of 16 parts dried **potato starch** and 5 parts succinic anhydride at 120.degree. for 5 hrs. gave a monoester, acid value 200, sapon. value 395. The monoester was neutralized with 10 parts pulverized Na₂CO₃ and by spraying 2-3 parts H₂O. The product was readily sol. in warm H₂O and useful as a stabilized **adhesive**.

- IT Vinyl compound polymers
(by **esterification** of vinyl alc. polymers with dicarboxylic anhydrides and neutralization of monoesters therefrom)
- IT Plastics and Resinous products
(moldings with reduced friction from ethylene polymers and)
- IT Anhydrides
(reaction products of dicarboxylic, with polysaccharides, vinyl alc. polymers, etc.)
- IT Polysaccharides
(reaction products with dicarboxylic anhydrides, water-sol.)
- IT **Adhesives**
(**starch** water-sol. reaction products with succinic anhydride as)
- IT 9002-88-4, Ethylene polymers
(moldings with reduced friction from, nylon 6 or polyoxymethylenes and)
- IT **9005-25-8, Starch**
(reaction product with succinic anhydride, water-sol.)
- IT 108-30-5, Succinic anhydride
(reaction products with **starch**)
- IT 9002-89-5, Vinyl alcohol polymers
(reaction with dicarboxylic anhydrides for water-sol. products)
- IT 110-15-6, Succinic acid
(**starch** H ester)

L71 ANSWER 69 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1959:128236 HCAPLUS

DN 53:128236

OREF 53:23019f-h

TI Tough **starch adhesives** and coatings

IN Lehmann, Rene L.; Gandon, Louis

PA Bozel-Maletra, Societe industrielle de produits chimiques

DT Patent

LA Unavailable

CC 28 (Sugars, Starch, and Gums)

FAN.CNT 1

- | | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---|------|----------|-----------------|-------|
| | ----- | ---- | ----- | ----- | ----- |
| PI | FR 1120163 | | 19560702 | FR | |
| AB | To prep. starch adhesives and coatings which resist the action of H ₂ O and rubbing, a starchy material (sol. starch , dextrin, corn starch , etc.) is treated with glyoxal or one of its derivs. in the presence of H ₂ O, either at room or an elevated temp., preferably in an acid medium. Evapn. of the solvent yields a product with the above properties. For example, 100 parts potato starch was mixed with 500 parts H ₂ O and 50 parts 50% glyoxal. The resulting adhesive was effectively preserved. After application to a surface and allowing the H ₂ O to evap., a tough H ₂ O-resistant film or coating was obtained. The product has applications in the glue, paint, wallpaper, and textile fields. | | | | |
| IT | Textiles
(adhesives and coatings for, starch-glyoxal reaction product for) | | | | |
| IT | Adhesives
(starch , glyoxal-modified) | | | | |
| IT | Coating(s)
(starch , glyoxal-toughened) | | | | |

IT Paint
 (starch-glyoxal reaction product for)
 IT Paper
 (wall-, starch-glyoxal reaction product for)
 IT Glyoxal, cyclic bis(ethylene mercaptal)
 (and derivs., starch treated with, for tough
 adhesives and coatings)
 IT 9004-53-9, Dextrin
 (glyoxal-treated, for tough adhesives and coatings)
 IT 9005-25-8, Starch
 (glyoxal-treated, for toughness)

L71 ANSWER 70 OF 70 HCAPLUS COPYRIGHT 2003 ACS

AN 1959:91940 HCAPLUS

DN 53:91940

OREF 53:16565f-i,16566b-c

TI Some factors affecting the behavior of starch as a
 flocculant in cane-sugar juice

AU Bennett, M. C.

CS Imp. Coll. Trop. Agr., Trinidad

SO Chem. & Ind. (London) (1958) 1552-3

DT Journal

LA Unavailable

CC 28 (Sugars, Starch, and Gums)

AB The factors affecting the activity of a starch soln. in a
 flocculated cane-sugar juice sample contg. a const. starch
 concn. (50 p.p.m.) are described in terms of the sedimentation rates. The
 latter were detd. (as the settling const., K) by the Schmidt method and
 expressed as percentages of the rate obtained in the absence of
 starch. The effects of bound phosphate (P) content, small concns.
 of electrolytes in the soln., and variations in the concn. of
 starch in the soln. added (and accordingly varying the vol. added
 so that a const. concn. of 50 p.p.m. in the juice is maintained) on the
 activity of starch were studied. The results are plotted in
 terms of activity (% effect) against bound P (mg./g. starch),
 cation concn. (meq./l.), and starch concn. (g./l.). The
 bound P contents of a starch soln. contg. 3.5 g./l. were calcd.
 as the difference between total and admixed inorg. P. Sepn. of the latter
 was effected by prepg. an aq. soln. of the starch, pptg. the
 starch in 70% EtOH, and centrifuging. The activity of the 4
 different potato starches was shown to increase with
 bound P contents. The decrease in the activity of starch soln.
 with increasing concns. of Na, Mg, and La chloride paralleled by decrease
 in the viscosity of the soln. is attributed to the decrease in the
 electrostatic effect between the neg. charged P centers in the
 amylopectin residues and the resulting contraction of the flexible
 amylopectin structure. The increase in the activity of the
 starch soln. by increasing the starch concn. in the
 soln. added was manifested by a rapid increase in the viscosity, but the 2
 effects did not run parallel. Retrogradation in the starch
 soln. is accompanied by a decrease in its activity; after 8 days, a 3.5
 g./l. starch soln. no longer affected the sedimentation of the
 preflocculated cane juice. The flocculating activity of
 starch could be described in terms of a starch network
 in which amylopectin aggregates are bound to the surface of the
 preformed flocs through their esterified phosphate groups, while the flocs
 are crosslinked by starch-starch bonds that
 already existed in the soln. added.

IT Sugar cane
 (ash in juices of)

IT Bonds
 (between amylopectins and flocs in sugar juices)

IT Sugar manufacture

(clarification or juice purification,
starch in)

IT Electrolytes
Phosphates
(effect on **starch flocculant** in sugar juices)

IT Ashes
(in sugar cane juices)

IT **Amylopectins**
(in sugar juices, as **flocculants**)

IT Sedimentation
(in sugar-cane juices, **starch flocculating** action
and)

IT Sugar cane
(**starch** as **flocculant** in juices from)

IT 7439-91-0, Lanthanum 7439-95-4, Magnesium 7440-23-5, Sodium
(effect on **starch flocculant** in sugar juice)

IT 7723-14-0, Phosphorus
(in sugar cane juice)

IT 7439-95-4, Magnesium 7440-70-2, Calcium
(in sugar cane juices)

IT **9005-25-8, Starch**
(in sugar juice, as **flocculant**)

IT 7440-09-7, Potassium
(in sugar-cane juice)

=> d 172 all tot

L72 ANSWER 1 OF 19 HCAPLUS COPYRIGHT 2003 ACS
AN 2003:340672 HCAPLUS
TI Preparation and **flocculation** of **cationic**
flocculating agent of modified **potato starch**
AU Feng, Yunsheng; Zhao, Xin; Dong, Guowen
CS Institute of Chemistry and Chemical Engineering, Qiqihar University,
Qiqihar, 161006, Peop. Rep. China
SO Huagong Shikan (2002), 16(10), 39-41
CODEN: HUSHFT; ISSN: 1002-154X
PB Huagong Shikan Zazhishe
DT Journal
LA Chinese
CC 61 (Water)
AB A **flocculating** agent PSF was prepd. by grafting acrylamide on
potato starch alkalified by NaOH to obtain modified
potato starch and reacting with tertiary amine, its
flocculation for kaoline wastewater and wastewater from
sugar/leather factory was studied. The effect of PSF dosage and pH on the
flocculation was discussed. The results showed PSF had good
flocculation for wastewater from sugar/leather factory.
ST **flocculating agent potato starch**
flocculation

L72 ANSWER 2 OF 19 HCAPLUS COPYRIGHT 2003 ACS
AN 2003:336888 HCAPLUS
TI Small **granule potato starch**, structure and
usability
AU Lewandowicz, G.; Blaszczyk, W.; Walkowski, A.
CS Starch and Potato Products Research Laboratory, Lubon, 62-030, Pol.
SO Zywnosc (2002), 9(4, Supl.), 84-97
CODEN: ZYWNFL
PB Polskie Towarzystwo Technologow Zywnosci, Oddzial Malopolski
DT Journal
LA English
CC 44 (Industrial Carbohydrates)

AB Small granule **potato starch** (SGPS) produced by "Wielkopolskie Przedsiębiorstwo Przemysłu Ziemniaczanego" during **potato starch** prodn. season 1999 was investigated to evaluate its physicochem. properties, structure and usability. SPGS was used as a raw material for different **modification** processes typically applied in the Polish **starch** industry to obtain both food and non-food products. The obtained preps. were compared with industrial products: food grade modified **starches** E 1403, E 1404, E 1412, E 1414 and E 1422, as well as two types of preps. for paper industry - oxidised **starch** for wet end **application** and corrugated board **adhesive**. The exptl. and ref. **starch** samples were examd. by chem. anal., rheol. methods, SEM and X-ray diffractometry. Textural parameters of deserts prepd. by means of food grade modified **starches** as well as some specific functional properties of industrial preps. were investigated. It was found that SPGS like std. **potato starch** contained quite small amts. of inorg. impurities as well as crude fiber, revealed similar rheol. properties but relatively low crystallinity. SGPS due to its unique physicochem. properties could be recommend as a raw material for the prodn. of corrugated board **adhesive**. Reactivity of SGPS towards sodium hypochlorite was found lower as compare to std. one. On the contrary susceptibility of SGPS to **crosslinking** with sodium trimetaphosphate seemed to be higher than of std. **starch**. The texture of food grade modified **starches** much differed from std. counterparts, which make possible to extent the assortment of these type products.

L72 ANSWER 3 OF 19 HCAPLUS COPYRIGHT 2003 ACS

AN 2003:19782 HCAPLUS

TI Microcapsules from **starch** granules

AU Korus, J.; Tomasik, P.; Lii, C. Y.

CS University of Agriculture, Krakow, 31 120, Pol.

SO Journal of Microencapsulation (2003), 20(1), 47-56

CODEN: JOMIEF; ISSN: 0265-2048

PB Taylor & Francis Ltd.

DT Journal

LA English

CC 63 (Pharmaceuticals)

AB A prepn. of microcapsules from granular **potato starch** by its prolonged (up to 48 h) soaking in water is proposed. The effects of temp. and size of granules is studied. Such treatment removes the amorphous part of the granule interior, forming empty domains inside granules. Material evacuated from the granules was identified as **amylopectin** together with **amylose**. The **application** of such pre-treated granules for microencapsulation of various fragrant compds. (angelicalactone, diacetyl, dibenzyl ether, 2,6-lutidine and myrcene) from their vapors and from their liq. state is described. Depending on pre-treatment of **starch** and the microencapsulation method applied, the amt. of trapped guest mols. is up to 30 wt%.

RE.CNT 51 THERE ARE 51 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L72 ANSWER 4 OF 19 HCAPLUS COPYRIGHT 2003 ACS

AN 2002:723648 HCAPLUS

DN 137:312621

TI **Starch** derivatives of high degree of functionalization Part 8.
Synthesis and **flocculation** behavior of **cationic starch** polyelectrolytes

AU Haack, Vera; Heinze, Thomas; Oelmeyer, Gert; Kulicke, Werner-Michael
CS Institute of Organic and Macromolecular Chemistry, Friedrich Schiller

University of Jena, Jena, D-07743, Germany

SO Macromolecular Materials and Engineering (2002), 287(8), 495-502
CODEN: MMENFA; ISSN: 1438-7492

PB Wiley-VCH Verlag GmbH & Co. KGaA

DT Journal

LA English

CC 44-6 (Industrial Carbohydrates)

AB Water sol. **starch** derivs. with a high degree of substitution (DS .ltoreq.1) contg. quaternary ammonium groups were prepd. by reacting **starches** with (3-chloro-2-hydroxypropyl)trimethylammonium chloride in EtOH/NaOH/H₂O or with (2,3-epoxypropyl)trimethylammonium chloride in aq.-alk. soln. Four types of **starches** were examd.: Hylon VII (70% **amylose**), **potato starch** (28% **amylose**), maize **starch** (28% **amylose**), and waxy maize **starch** (1% **amylose**). The DS values of the samples can be controlled by adjusting the molar ratio of **cationization** agent to anhydroglucose unit and is only slightly dependent on the **amylose** content of the starting **starch** material. The structures of the **cationic starch** derivs. were confirmed by NMR spectroscopy. Dewatering expts. with the **cationic starch** derivs. to evaluate their **flocculation** properties were conducted on the harbor sediment suspension using a lab. pressure filtration app. The **cationic starches** were used alone and in combination with a high-molar-mass synthetic polyanion (poly(acrylamide-co-acrylate), PAA). Both dependence on the DS of the sample and influence of the **amylose/amylopectin** ratios of the initial native **starch** were obsd. The highest dewatering index of 63 was found for the **cationic** polyelectrolyte based on the **amylopectin** rich waxy maize **starch** in monoflocculation. In case of dual **flocculation** using PAA a dewatering index of even 85 was attained.

ST **flocculation** property **cationized starch**;
cationization starch quaternary ammonium salt

IT Polyelectrolytes
(anionic; prepn. and **flocculation** behavior of **cationic starch** polyelectrolytes)

IT Polyelectrolytes
(**cationic**; prepn. and **flocculation** behavior of **cationic starch** polyelectrolytes)

IT **Flocculation**
(prepn. and **flocculation** behavior of **cationic starch** polyelectrolytes)

IT 3033-77-0, Quab 151 3327-22-8, Quab 188
RL: RCT (Reactant); RACT (Reactant or reagent)
(modifier; prepn. and **flocculation** behavior of **cationic starch** polyelectrolytes)

IT 9063-45-0P, 2-Hydroxy-3-(trimethylammonio)propyl **starch**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(prepn. and **flocculation** behavior of **cationic starch** polyelectrolytes)

IT 79-06-1DP, Acrylamide, polymers with acrylates, complexes with **cationic starch** 79-10-7DP, Acrylic acid, derivs., polymers with acrylamide, complexes with **cationic starch** 9063-45-0DP, 2-Hydroxy-3-(trimethylammonio)propyl **starch**, complexes with acrylamide-acrylate copolymer
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and **flocculation** behavior of **cationic starch** polyelectrolytes)

RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L72 ANSWER 5 OF 19 HCAPLUS COPYRIGHT 2003 ACS

AN 2000:84928 HCAPLUS

DN 132:124425

TI **Starch** derivative-based **adhesive** composition

IN Bleeker, Ido Pieter; Kamminga, Willem; Kesselmanns, Ronald Peter Wilhelmus

PA Cooperatieve Verkoop- En Productievereniging Van Aardappelmeel En Derivaten, Neth.

SO PCT Int. Appl., 21 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C09J103-04

ICS C08B035-00; C09J103-14

CC 44-8 (Industrial Carbohydrates)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000005319	A1	20000203	WO 1999-NL459	19990719
	W:	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
	CA 2337890	AA	20000203	CA 1999-2337890	19990719
	AU 9950708	A1	20000214	AU 1999-50708	19990719
	BR 9912349	A	20010417	BR 1999-12349	19990719
	EP 1109873	A1	20010627	EP 1999-935175	19990719
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO			
PRAI	EP 1998-202489	A	19980723		
	WO 1999-NL459	W	19990719		

AB The compn. contains a **starch** having .gtoreq.95% **amylopectin**, which has been modified by **crosslinking**, **etherification** or/and **esterification**. The invention further relates to a process for prepg. the **adhesive** compn: and to the use thereof for adhering wallpaper or billposters to a substrate. Thus, a wallpaper **adhesive** obtained from epichlorohydrin-

crosslinked carboxymethylated **amylopectin** potato **starch** had good balance of adhesion and easy release.

ST **amylopectin starch** epichlorohydrin **crosslinked** carboxymethylated **adhesive**; wallpaper **adhesive** carboxymethylated epichlorohydrin **crosslinked starch**

IT **Adhesives**
(**starch** deriv.-based **adhesive** compn. for wallpaper)

IT Paper
(wallpaper; **starch** deriv.-based **adhesive** compn. for wallpaper)

IT 72316-65-5P
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**starch** deriv.-based **adhesive** compn.)

IT 3327-22-8DP, 3-Chloro-2-hydroxypropyltrimethylammonium chloride, reaction products with **starch** copolymer 69331-40-4P, Epichlorohydrin-carboxymethyl hydroxypropyl **starch** copolymer 161108-85-6P 188363-65-7DP, Hydroxypropyl **starch**-sodium trimetaphosphate copolymer, reaction products with 3-chloro-2-hydroxypropyltrimethylammonium chloride
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**starch** deriv.-based **adhesive** compn. for wallpaper)

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

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L72 ANSWER 6 OF 19 HCAPLUS COPYRIGHT 2003 ACS

AN 1998:15953 HCAPLUS

DN 128:63104

TI **Very lightly crosslinked** carboxymethyl **starch** preparation for use as a retardation agent and in retarded pharmaceutical compositions

IN Lochner, Thomas

PA Chemische Fabrik Pirna-Copitz G.m.b.H., Germany

SO Ger. Offen., 10 pp.

CODEN: GWXXBX

DT Patent

LA German

IC ICM C08L003-08

ICS A61K009-22; C08B031-14

CC 44-6 (Industrial Carbohydrates)

Section cross-reference(s): 63

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19622790	A1	19971211	DE 1996-19622790	19960606
	WO 9746592	A1	19971211	WO 1997-DE1138	19970606
	W: US				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	EP 904298	A1	19990331	EP 1997-926983	19970606
	EP 904298	B1	20020403		
	R: AT, CH, DE, ES, FR, GB, IT, LI, NL, IE				
	AT 215566	E	20020415	AT 1997-926983	19970606
PRAI	DE 1996-19622790	A	19960606		
	WO 1997-DE1138	W	19970606		

- AB The title products, having a low viscosity and forming clear, gel-like solns. in H₂O, are prepd. Reaction of 850 g **potato starch** in 1.5 L MeOH with 450 mL 45% NaOH and then with 300 g ClCH₂CO₂H gave a fine, nearly white, free-flowing powder with pH 5.5-7.5, NaCl content <1%, Na glycolate content <2%, drying loss <10%, and degree of substitution 0.15-0.13, forming a 2% aq. soln. as a clear, low-viscosity gel. Use of the product in pharmaceutical tablets is exemplified.
- ST carboxymethyl **starch crosslinking** light; retardation agent carboxymethyl **starch**; pharmaceutical delayed carboxymethyl **starch**; gel aq carboxymethyl **starch**
- IT Drug delivery systems
(sustained-release; very lightly **crosslinked** carboxymethyl **starch** prepn. for use in retarded pharmaceutical compns.)
- IT 9057-06-1P, CM-**starch**
RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)
(very lightly **crosslinked** carboxymethyl **starch** prepn. for use as a retardation agent and in retarded pharmaceutical compns.)
- L72 ANSWER 7 OF 19 HCAPLUS COPYRIGHT 2003 ACS
- AN 1992:533215 HCAPLUS
- DN 117:133215
- TI **Cationic crosslinked starch** derivatives as drainage and retention aids for **paper manufacture**
- IN Anderson, Kevin R.
- PA Cargill, Inc., USA
- SO U.S., 12 pp.
CODEN: USXXAM
- DT Patent
- LA English
- IC ICM D21H017-29
- NCL 162175000
- CC 43-7 (Cellulose, Lignin, Paper, and Other Wood Products)
- FAN.CNT 1
- | | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|----------------|------|----------|-----------------|----------|
| PI | US 5122231 | A | 19920616 | US 1990-534945 | 19900608 |
| PRAI | US 1990-534945 | | 19900608 | | |
- AB Addn. of **cationic crosslinked starch** (I) to anionic pulp or furnish during paper manuf. results in near zero .zeta. potential, increases I loading and drainage, and enhances the wet and dry strength of paper and retention of fines and fillers. Thus, paper stock mixed with (3-chloro-2-hydroxypropyl)trimethylammonium chloride **starch** ether **crosslinked** with Etadurin-31 (a polyaminopolyepoxide polymer) showed drainage enhancement of 30-50% and retention improvement of 5-10% over **cationic** corn and **cationic potato** I. Significantly increases in tensile and bursting strength were also obsd. upon addn. of **cationic crosslinked** I.
- ST **cationic crosslinked starch** paper manuf; alkylammonium chloride **starch** ether **crosslinked**; polyaminopolyepoxide **crosslinker cationic starch**
- IT Paper
(drainage and retention aids for, **crosslinked cationic starch** derivs. as)
- IT Quaternary ammonium compounds, polymers
RL: USES (Uses)
(hydroxyalkyltrimethyl, chlorides, polymers, **crosslinked**, drainage and retention aids, for paper)
- IT **Crosslinking agents**

(polyaminopolyepoxides and phosphorus oxychloride and glycol ether, for **cationic starch**)

IT 2425-79-8D, 1,4-Butanediol diglycidyl ether, reaction products with **cationic starch** 10025-87-3D, Phosphorus oxychloride, reaction products with **cationic starch** 56780-58-6D, reaction products with ethers or epoxy resins or phosphorus compds. 143476-52-2D, Etadurin 31, reaction products with **cationic starch**

RL: USES (Uses)

(**crosslinked**, drainage and retention aids, for paper)

L72 ANSWER 8 OF 19 HCAPLUS COPYRIGHT 2003 ACS

AN 1991:45365 HCAPLUS

DN 114:45365

TI Destructurized **starch** manufacture

IN Sachetto, Jean Pierre; Egli, Markus; Stepto, Robert Frederick Thomas; Zeller, Heinz

PA Warner-Lambert Co., USA

SO Eur. Pat. Appl., 11 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM C08B030-12

ICS C08L003-06

CC 44-6 (Industrial Carbohydrates)

Section cross-reference(s): 63

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 391853	A2	19901010	EP 1990-810256	19900329
	EP 391853	A3	19920226		
	R: BE, DE, FR, GB, IT, NL				
	GB 2231880	A1	19901128	GB 1989-7459	19890403
	CA 2013134	AA	19901003	CA 1990-2013134	19900327
	CN 1046169	A	19901017	CN 1990-101697	19900327
	JP 03002236	A2	19910108	JP 1990-75801	19900327
PRAI	GB 1989-7459		19890403		

AB Destructurized **starch** with good thermoplastic processability contains bound phosphate groups and 5-30% H₂O, the ratio M₂⁺-M⁺-H⁺ being 0.0-1.9:0.0:0.9:0.0-1.4 (M₂⁺ = divalent **cations** bound to phosphate; M⁺ = monovalent **cation**) and M₂⁺ + M⁺ + H⁺ being 2 equiv./phosphate group. Thus, native **potato starch** phosphate (M₂⁺-M⁺-H⁺ = 0.5:0.7:0.8; H₂O 20%, n₂₀₆ anhydroglucose units/phosphate group) was stirred in water contg. 28 g CaCl₂ and 73 g NaCl for 30 min, filtered, and washed to give a **starch** with Ca₂⁺-Na⁺-H⁺ = 0.9:0.4:0.7. This **starch** could be injection molded in the presence of additive at 1430 bar with a defect level 0%; vs. 1990 bar and 15%, resp., for untreated **starch**.

ST moldability **starch** phosphate salt

IT Bottles

Containers

Packaging materials

Pipes and Tubes

(**starch** phosphate salts for molding of)

IT Pharmaceutical dosage forms

(capsules, **starch** phosphate salts for molding of)

IT Pharmaceutical dosage forms

(granules, **starch** phosphate salts for molding of)

IT Pharmaceutical dosage forms

(powders, **starch** phosphate salts for molding of)

IT 131595-11-4P 131595-12-5P

RL: IMF (Industrial manufacture); PREP (Preparation)

(manuf. of, with good moldability)

L72 ANSWER 9 OF 19 HCAPLUS COPYRIGHT 2003 ACS
 AN 1988:612634 HCAPLUS
 DN 109:212634
 TI **Waterproofing starch** binders using a microencapsulated agent
 IN Jansen, Johannes Jacobus; Mossou, Bernardes Hendricus Franciscus; Poort, Hans
 PA AVEBE B.A. Cooperatieve Verkoop- en Productievereniging van Aardappelmeel en Derivaten, Neth.
 SO Eur. Pat. Appl., 5 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 IC ICM D21H001-24
 ICS C09J003-06
 CC 43-7 (Cellulose, Lignin, Paper, and Other Wood Products)
 Section cross-reference(s): 33

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 278582	A2	19880817	EP 1988-200241	19880210
	EP 278582	A3	19881005		
	R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE				
	NL 8700330	A	19880901	NL 1987-330	19870211
	FI 8800481	A	19880812	FI 1988-481	19880202
	NO 8800548	A	19880812	NO 1988-548	19880209
	JP 63227891	A2	19880922	JP 1988-27840	19880210
	US 4873147	A	19891010	US 1988-155042	19880211
PRAI	NL 1987-330		19870211		

AB Waterproof **starch** (I) binders are applied to substrates, e.g., paper, by premixing a I dispersion with a microencapsulated waterproofing agent or catalyst, and then allowing the waterproofing agent to react with I mols. by digesting the microcapsules. Thus, 100 wt. parts aq. **potato** I phosphate soln. (pH 6.3) was mixed with 5 wt.% Al₂(SO₄)₃ (II) microencapsulated in wax to form an **adhesive** soln., which was spread on kraft paper and then bonded to grayboard. The paper-grayboard laminate was pressed at 120.degree. and 3.5 bar for 5 s and then immersed in H₂O at 25.degree., showing complete delamination after 3.5 h, compared with complete delamination after 5 min without II. When II was added in nonmicroencapsulated form, spontaneous **crosslinking** occurred, which prevented the use of the soln. as an **adhesive**.

ST **starch** waterproofing microencapsulated aluminum sulfate;
adhesive paper waterproofed **starch** ester; wax
 microencapsulated aluminum sulfate

IT Paper
 Paperboard
 (manuf. of waterproof, **starch** ester contg. microencapsulated aluminum sulfate in)

IT Waxes and Waxy substances
 RL: USES (Uses)
 (microcapsules, contg. aluminum sulfate, in **starch** ester **adhesive** manuf., waterproof)

IT Waterproofing
 (of **starch** ester **adhesive**, with microencapsulated aluminum sulfate)

IT **Adhesives**
 (**starch** ester-microencapsulated aluminum sulfate compn., for paper and paperboard, waterproof)

IT Encapsulation
 (micro-, of aluminum sulfate, with wax, in **starch** ester **adhesive** manuf., waterproof)

IT 11120-02-8
 RL: USES (Uses)
 (adhesives, waterproofing of, with microencapsulated aluminum sulfate, for paper)

IT 10043-01-3, Aluminum sulfate
 RL: USES (Uses)
 (microencapsulated, waterproofing agents, for starch ester adhesives)

L72 ANSWER 10 OF 19 HCAPLUS COPYRIGHT 2003 ACS

AN 1981:53008 HCAPLUS

DN 94:53008

TI Stable active granule preparations

PA Agency of Industrial Sciences and Technology, Japan

SO Jpn. Kokai Tokkyo Koho, 3 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC A61K009-00

CC 63-7 (Pharmaceuticals)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 55130909	A2	19801011	JP 1979-39226	19790331
	JP 57029447	B4	19820623		
	US 4339360	A	19820713	US 1980-129335	19800311
PRAI	JP 1979-39226		19790331		

AB Aldehyde group-contg. high mol.-wt. substance granules are coated with OH-contg. high mol. wt. substance (such as poly(vinyl alc.)) to produce a stable granule product. The granules can be used in the removal of urea, NH₃ and lower amines from blood or other body fluids. For example, **potato starch** was oxidized to form dialdehyde **starch** [9047-50-1], which was dispersed in water and treated with poly(vinyl alc.) [9002-89-5] and then with concd. H₂SO₄ at 40.degree. for 5 h. The granules were collected and repeatedly washed with water to give stable, poly(vinyl alc.)-coated dialdehyde **starch** granules. Aldehyde groups on the surface of granules were reacted with the OH-group of poly(vinyl alc.).

ST dialdehyde **starch** polyvinyl alc coating; blood **detoxication** adsorbent

IT Amines, biological studies

RL: BIOL (Biological study)

(blood toxins, poly(vinyl alc.)-coated dialdehyde **starch** granules as adsorbent for removal of)

IT Circulation

(extracorporeal, poly(vinyl alc.)-coated dialdehyde **starch** granules as adsorbent for amines removal in)

IT 9002-89-5

RL: BIOL (Biological study)

(dialdehyde **starch** granules coating with, for blood amino compds. removal)

IT 9047-50-1

RL: BIOL (Biological study)

(granules, polyvinyl alc.-coated, for blood amino compds. removal)

L72 ANSWER 11 OF 19 HCAPLUS COPYRIGHT 2003 ACS

AN 1977:73798 HCAPLUS

DN 86:73798

TI Biodegradable plastic film

PA Personal Products Co., USA

SO Neth. Appl., 10 pp.

CODEN: NAXXAN

DT Patent

LA Dutch
 IC A61L015-00
 CC 36-6 (Plastics Manufacture and Processing)
 Section cross-reference(s): 63

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	NL 7504183	A	19761012	NL 1975-4183	19750408
PRAI	NL 1975-4183		19750408		
AB	Biodegradable moisture barrier films contain a nonbiodegradable film-forming material, 40-60% (based on total) homogeneously dispersed biodegradable material, esp. a carbohydrate or protein, and optionally <60.degree. (based on total) of a plasticizer. Thus, 30 parts potato starch dextrin [9004-53-9] was slurried with 900 parts cold water, mixed with 50 parts poly(vinyl alc.) [9002-89-5] and 20 parts glycerol [56-81-5], stirred 30 min at 93.degree., cast into a film on a waxed glass sheet, and dried 5-10 min at 71.degree., giving a self-supporting film with thickness 40 .mu., which was strong, flexible, and water-impermeable, and was suitable for use as an outer moisture barrier layer in applications such as disposable diapers and sanitary napkins.				
ST	biodegradable moisture barrier film; polyvinyl alc biodegradable film; dextrin biodegradable film additive; carbohydrate biodegradable film additive; protein biodegradable film additive; glycerol plasticizer biodegradable film				
IT	Biodegradable materials (dextrin-glycerol-poly(vinyl alc.) films)				
IT	9004-53-9				
	RL: USES (Uses) (biodegradable additive, for plastic films)				
IT	9002-89-5				
	RL: USES (Uses) (biodegradable films, contg. dextrin)				
IT	56-81-5, uses and miscellaneous				
	RL: MOA (Modifier or additive use); USES (Uses) (plasticizers, for biodegradable poly(vinyl alc.) films)				

L72 ANSWER 12 OF 19 HCAPLUS COPYRIGHT 2003 ACS
 AN 1974:110182 HCAPLUS
 DN 80:110182
 TI Modified polysaccharide **flocculating** agents
 IN Rothwell, Eric; Smalley, Graham
 PA Allied Colloids Ltd.
 SO Ger. Offen., 20 pp.
 CODEN: GWXXBX

DT Patent
 LA German
 IC C08B
 CC 44-5 (Industrial Carbohydrates)
 Section cross-reference(s): 60

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2312450	A1	19730920	DE 1973-2312450	19730313
	GB 1413301	A	19751112	GB 1972-11618	19730223
	US 3823100	A	19740709	US 1973-337987	19730305
PRAI	GB 1972-11618		19720313		
AB	Potato or corn starch was treated with acrylamide (I) and the product dimethylaminomethylated to give 2-[(dimethylamino)methylcarbamoyl]ethyl starch ether (II) [50806-97-8] useful as a flocculating agent for kaolin suspension and as a dewatering agent for cellulose fiber suspension or aq. sewage sludge. Thus, an aq. mixt. contg. potato starch				

, I, and NaOH was heated 24 hr at 50.deg., neutralized with HCl, pptd. with MeOH, and filtered to give an intermediate contg. 2.1% N with a substitution degree of 0.294, which was treated in aq. soln. with Me₂NH and HCHO 16 hr at 40.deg. to give II. An aq. 290 kaolin suspension showed a sedimentation rate of 305 cm/hr when mixed with 500 ppm (based on the kaolin) II compared with 42.6 cm/hr when **potato starch** contg. 0.1% active material was used.

ST **starch** acrylamide **modification**;
aminomethylcarbamoylethyl ether **starch**; **flocculating**
agent **starch**; dewatering agent **starch**; sewage sludge
dewatering agent; cellulose fiber suspension dewatering; carbamoylethyl
ether **starch**.

IT **Flocculating** agents
(acrylamide **starch** derivs., for cellulose pulp)

IT Pulp, cellulose
(**flocculating** agents for, acrylamide-modified **starch**
as)

IT Waste water treatment
(**flocculating** agents for, acrylamide-treated **starch**.
as)

IT 2-Propenamide, reaction products with **starch** and dimethylamine
Methanamine, N-methyl-, reaction products with **starch** and
acrylamide

Starch, reaction products with acrylamide and dimethylamine
RL: USES (Uses)
(**flocculating** agents, for kaolinite suspensions and sewage
water)

IT 1318-74-7, uses and miscellaneous
RL: USES (Uses)
(**flocculating** agents for, acrylamide-modified **starch**
as)

IT 50806-97-8
RL: USES (Uses)
(**flocculating** agents, for kaolinite suspensions and sewage
water)

L72 ANSWER 13 OF 19 HCAPLUS COPYRIGHT 2003 ACS

AN 1969:514437 HCAPLUS

DN 71:114437

TI **Cationic starch** compositions

IN Dishburger, Henry J.; Coker, William P.

PA Dow Chemical Co.

SO U.S., 3 pp.

CODEN: USXXAM

DT Patent

LA English

IC C08B; D21H

NCL 260009000

CC 44 (Industrial Carbohydrates)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3467608	A	19690916	US 1966-560828	19660627
	BE 734981	A	19691223	BE 1969-734981	19690623
PRAI	US 1966-560828		19660627		
	CA 1969-53143		19690530		

AB **Cationic starch** compds. are prepd. by treating a
starch with a polyalkylenimine or polyalkylenepolyamine with mol.
wt. .gtoreq.50,-000. Thus, 25 g. **potato starch** (I)
was added to 50 g. 33% aq. polyethylenimine (II) prepd. by aq. polymn. of
ethylenimine with ethylene dichloride, heated 2 hrs. at 90.degree.,
cooled, and poured into 2:1 MeOH-Et₂O. The modified I ppt. was collected,
washed with MeOH, and dried overnight at 25.degree. and 1 hr. at

75.degree., giving a white powder which was suspended in HCl-acidified 3:2 MeOH-H₂O, washed with this soln., washed with MeOH, and dried. A suspension of 24.77 g. I in 475 g. H₂O was heated 1 hr. at 87.degree., heated with 0.23 g. II (33% aq.) for 1 hr. at 87.degree., dild. with 475 g. H₂O, and cooled. This product and a similar product prepd. with **cornstarch** (III) were dild. with H₂O for use as **flocculating** agents on magnetite-type taconite tailings (**flocculating** agent, ppm. agent used, optical d., and in./min. settling rate given): none, -, - (offscale), - (offscale); II-modified I, 20, 29, 17.7; triethylenetetramine-1,2-dichloroethane condensate (IV)-modified III, 20, 55, 15.0; II-modified III, 20, 315, 12.0; IV-modified III, 100, 215, 8.6. Better **flocculation** was obtained by using the II-modified I than by using aminoethylated **starch** prepd. from ethylenimine and I.

ST **cationic starch** compns; **starch** compns
cationic; **potato starch** polyamines; corn
starch polyamines; polyethylenimine **starch** compns;
flocculating agents taconite tailings; taconite tailings
flocculating agents
IT **Flocculation**
(agents for, ethylenimine polymer-modified **starch**)
IT Amines, compounds
RL: USES (Uses)
(polyalkylenepoly-, reaction products with **starch**, as
flocculants)
IT **Starch**
RL: USES (Uses)
(reaction products with ethylenimine polymers, as **flocculants**
)
IT 9002-98-6 25702-73-2
RL: USES (Uses)
(reaction products with **starch**, as **flocculants**)

L72 ANSWER 14 OF 19 HCAPLUS COPYRIGHT 2003 ACS
AN 1969:492828 HCAPLUS
DN 71:92828
TI Production of enzyme-degraded **starch**
AU Nacu, A.; Keneres-Ursu, I.
SO Celuloza si Hirtie (1956-1974) (1969), 18(5), 201-6
CODEN: CLOZA8; ISSN: 0008-879X
DT Journal
LA Romanian
CC 43 (Cellulose, Lignin, Paper, and Other Wood Products)
AB The advantages of degrading **starch** (I) enzymically are stressed in comparison with oxidn., **esterification**, or other transformations of I for paper coating uses. In 17 expts. with Romanian **potato** I, using amidosol (II), a Romanian product contg. pancreatic .alpha.-amylase, the concns. of I and II, the pH, time and temp. of hydrolysis and of the enzyme inactivation, were varied in order to obtain a >15-hr. stability of the hydrolyzed product, as required by the paper industry. The degree of hydrolysis was estd. from the viscosity, surface tension, and the amt. of reducing substances formed. The latter are undesirable, because they reduce the **adhesive** properties of the product. The following procedure is recommended: To 400 l. H₂O in a vat, add gradually, after starting the agitator, 100 kg. I to insure a uniform dispersion. After homogenizing it, heat to 50.degree. and add 0.6 kg. II within <10 min., until I gels, maintaining at 50.degree. for 40 min. Then raise the temp. within 10 min. to 64.degree., and during the following 30 min. to 72.degree.. Inactivation of the enzyme by increasing the temp. to 95.degree. for 12 min. and then to 100.degree. for 30 min. immediately follows hydrolysis. The I thus hydrolyzed had a fluidity (by the DIN method) of 11-12 stokes at 50.degree. and of 12-13 stokes at 25.degree.. The Brookfield viscosity

was 11.5 and 16.5 cp. at 50.degree. and 25.degree., resp., which after heating and cooling attained 12.5 and 17.5 cp., resp.

ST enzyme degrdn **starch**; **starch** enzyme degrdn; degrdn
starch enzyme; paper coatings **starch**; coatings
starch paper

IT Enzymes
RL: RCT (Reactant); RACT (Reactant or reagent)
(**starch** hydrolysis by)

IT **Starch**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydrolysis of, by pancreatic .alpha.-amylases)

IT 9000-90-2, Amylases, .alpha.-
(in pancreas, **starch** hydrolysis by)

L72 ANSWER 15 OF 19 HCAPLUS COPYRIGHT 2003 ACS

AN 1951:51593 HCAPLUS

DN 45:51593

OREF 45:8792b-e

TI **Starch adhesive** sheet material and composition
therefor

IN Nestor, Leonard R.

PA Minnesota Mining & Manufg. Co.

DT Patent

LA Unavailable

CC 28 (Sugars, Starches, and Gums)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2559043		19510703	US	
AB	A H2O-activated adhesive sheet material is prepd. from a starch -base adhesive and a paper backing. A soln. of 250 parts NaOCl in 1400 H2O is heated to 85.degree.F., 1700 potato starch added, and high-speed stirring is continued 30 min., the temp. rising to 105.degree.F. Aliquots are withdrawn, neutralized, and 50% NaOH is added (in the ratio for the adhesive formula), and the viscosity detd. When the viscosity is 800-1200 centipoises at 120.degree. and concn. approx. 50% solids, 340 parts 50% NaOH is added to the batch at such a rate that the temp. does not exceed 125.degree.. The adhesive is applied by transfer rolls to paper backing at 100-120.degree. and the H2O removed at 200-270.degree.. The application to 60-lb. kraft paper (ream of 320 sq. yards) is 15-20 lb. adhesive /ream, the amt. of H2O used for activation 8-10 lb./ream, and the moistened adhesive retains its tack for 10-25 sec.				

IT **Adhesives**
(from **starch**, for sheet materials)

L72 ANSWER 16 OF 19 HCAPLUS COPYRIGHT 2003 ACS

AN 1945:24785 HCAPLUS

DN 39:24785

OREF 39:3956g-i

TI **Adhesive starch** composition

IN Fenn, James E.

PA Stein, Hall & Co.

DT Patent

LA Unavailable

CC 28 (Sugar, Starch, and Gums)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2372666		19450403	US	
AB	An adhesive compn. consisting of a mixt. of enzyme-converted starch , raw starch , urea, and salt is described.				

Tapioca or **potato starch** is preferred to other varieties. For example, 600 lbs. of high-grade tapioca **starch**, 800 lbs. of H₂O, and 4 oz. of dried malt diastase are heated with stirring to 160.degree.F., allowed to stand for 30 min., and heated to 190.degree.F. to inactivate the enzyme. Urea 50 lbs., NaCl 20 lbs., and cold H₂O 150 lbs. are then added, followed by 400 lbs. of medium-grade tapioca **starch**. The whole is then stirred until homogeneous. The **adhesive** material is useful in cloth and paper laminating applications.

L72 ANSWER 17 OF 19 HCAPLUS COPYRIGHT 2003 ACS

AN 1939:31527 HCAPLUS

DN 33:31527

OREF 33:4468f-h

TI **Flocculation and clarification** of slimes with organic **flocculants**

AU Gardner, Geo. R.; Ray, Kenneth B.

SO Am. Inst. Mining Met. Engrs., Tech. Pub. (1939), No. 1052, 20 pp.

DT Journal

LA Unavailable

CC 1 (Apparatus, Plant Equipment, and Unit Operations)

AB **Starch** solns. capable of **flocculating** finely divided solids suspended in H₂O can be prepd. either by heating under pressure at 100-160.degree. or by causticizing **starch** paste. Max. efficiency with a noncaustic soln. is attained when the reagent is prepd. at 140-145.degree.. Causticizing temp. depends on strength of caustic soln. used. At 25.degree. an efficient reagent can be produced with a 2.5% soln. of com. NaOH. **Starch** reagent can be prepd. most economically by causticizing or heating a 5% **starch** paste with thorough mixing and dilg. Any **starch** can be used, but **potato starch** is recommended. Solns. prepd. by heat alone will retain their properties for 3 days, causticized solns. for 2 weeks or more. As percentage of solids in slurry increases, rate of settling decreases, independent of material or treatment. Settling index increased with increasing temp., e. g., 4 times between 4 and 40.degree.. Min. rate of settling is at pH 7.0; the most pronounced rise is on the alk. side.

L72 ANSWER 18 OF 19 HCAPLUS COPYRIGHT 2003 ACS

AN 1939:21382 HCAPLUS

DN 33:21382

OREF 33:3080b-c

TI Surgical plaster bandage

IN Audley-Charles, John K.

PA Frank Worrall

DT Patent

LA Unavailable

CC 17 (Pharmaceuticals, Cosmetics, and Perfumes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2144675		19390124	US	
AB	A strip of textile material has incorporated with it a mixt. formed of the dry materials, e. g., plaster of Paris 14, cassava starch 4, and potato starch 4 parts, and an accelerator such as K ₂ SO ₄ and borax to regulate the speed of setting of the mixt. when moistened, such a plaster being hard setting but easily disrupted and removed by treatment with water at a temp. safe for application to the human body.				

L72 ANSWER 19 OF 19 HCAPLUS COPYRIGHT 2003 ACS

AN 1935:39964 HCAPLUS

DN 29:39964

OREF 29:5199a-b

TI **Starch adhesives** and their **applications**

AU Ducro

SO Recherches & inventions (1935), 16, 254-7

DT Journal

LA Unavailable

CC 13 (Chemical Industry and Miscellaneous Industrial Products)

AB A description of the manuf. of **potato starch** and of the use of **starch** paste in the manuf. of wall paper and of the use of powdered **starch** as an **adhesive** for applying wall paper.